

**University of Louisiana at Monroe
College of Pharmacy Basic
Pharmaceutical Sciences
Accreditation Information Sheet**

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ACCREDITATION COUNCIL FOR PHARMACY EDUCATION

FORM F: Faculty Information

A. Information

Name: William M. Bourn Date of Birth _____
 Department/Division Internal Operations Licensed Pharmacist? No Yes State LA
 First Title at College Assistant Professor of Pharmacology Date Appointed 9/1/1974
 Current Title Director of Development Date Appointed 7/1/2004

B. Percentage activity (totals 100%):

Teaching 10 Scholarship 0 Service 0 Administrative (if applicable) 90

Estimated distribution of workload in the past year (%):

Activity	Per Cent (%)
Teaching:	
Didactic	<u>5</u>
Experiential	<u>0</u>
Practice	<u>0</u>
Scholarly Activity	<u>0</u>
Committee Assignments	<u>0</u>
Student Advising	<u>0</u>
Faculty Mentoring	<u>0</u>
Administration	<u>95</u>
Other:	
Total	100%

C. Teaching Responsibilities: List teaching responsibilities, during academic year of on-site evaluation; if different from previous years indicate (e.g. courses taught, include team teaching, practice experiences)

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D. Post-Secondary/Professional Education

New Mexico Military Institute	1960-1961	None
College	Dates Attended	Degree Earned
University of New Mexico	1961-1962, 1963-1967	B.S. Pharmacy
College	Dates Attended	Degree Earned

E. Graduate Education (Master of Science, Doctor of Philosophy)

University of Arizona	1968-1974	Ph.D. Pharmacology
College	Dates Attended	Degree Earned
College	Dates Attended	Degree Earned

F. Post-Graduate Training (Post-Doctoral training, Residency, Fellowship)

Institution	Dates Attended	Position
Institution	Dates Attended	Position

G. Previous Academic Positions

University of New Mexico	9/1/1967-5/31/1968	Instructor Pharmacology
Institution	Dates of Employment	Position
Institution	Dates of Employment	Position

H: Publications during past 3 years

I. Presentations during past 3 years

Guest Lectures in Pharmacology Courses

Presentation on "Deans' Advisory Councils", AACP Development Directors' SIG

J. Present Scholarly Interests and Activities

General Pharmacology

K. Present Professional Interests and Activities

Development/fundraising

ACCREDITATION COUNCIL FOR PHARMACY EDUCATION

FORM F: Faculty Information

A. Information

Name: Karen P. Briski Date of Birth _____
 Department/Division Basic Pharmaceutical Sciences Licensed Pharmacist? No Yes State _____
 First Title at College Associate Professor Date Appointed 1/1999
 Current Title Professor, Department Head Date Appointed 7/2004

B. Percentage activity (totals 100%):

Teaching 25 Scholarship 35 Service 10 Administrative (if applicable) 30

Estimated distribution of workload in the past year (%):

Activity	Per Cent (%)
Teaching:	
Didactic	<u>25</u>
Experiential	<u>0</u>
Practice	<u>0</u>
Scholarly Activity	<u>45</u>
Committee Assignments	<u>5</u>
Student Advising	<u>0</u>
Faculty Mentoring	<u>0</u>
Administration	<u>25</u>
Other:	
Total	100%

C. Teaching Responsibilities: List teaching responsibilities, during academic year of on-site evaluation; if different from previous years indicate (e.g. courses taught, include team teaching, practice experiences)

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 PHAR 412
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D. Post-Secondary/Professional Education

Albright College	1971-1975	B.S. Biology
College	Dates Attended	Degree Earned
College	Dates Attended	Degree Earned

E. Graduate Education (Master of Science, Doctor of Philosophy)

University of Michigan	1975-1981	M.S., Ph.D.
College	Dates Attended	Degree Earned
College	Dates Attended	Degree Earned

F. Post-Graduate Training (Post-Doctoral training, Residency, Fellowship)

Michigan State University	1982-1983	Postdoctoral Fellow
Institution	Dates Attended	Position
State University of New York at Buffalo	1985-1988	NIH-sponsored Postdoctoral Fellow
Institution	Dates Attended	Position

G. Previous Academic Positions

Washington State University	1988-1998	Assistant Prof., Associate Prof.
Institution	Dates of Employment	Position
Institution	Dates of Employment	Position

H: Publications during past 3 years

Paranjape, S.A., Briski, K.P. (2005) Recurrent insulin-induced hypoglycemia causes site-specific patterns of habituation or amplification of CNS neuronal genomic activation. *Neuroscience*, 130: 957-970.

Patil, G.D., Briski, K.P. (2005) Transcriptional activation of nucleus tractus solitarius/area postrema catecholaminergic neurons by pharmacological inhibition of caudal hindbrain monocarboxylate transporter function. *Neuroendocrinology*, 81:96-102.

Singh, S.R., Briski, K.P. (2005) Central GABAA, but not GABAB receptors mediate suppressive effects of caudal hindbrain glucoprivation on the LH surge in the steroid-primed, ovariectomized female rat. *J. Neuroendocrinol.*, 17: 407-12.

Sylvester, P.W., Shah, S.J., Haynie, D.T., Briski, K.P. (2005) Effects of ultra-wide band electromagnetic pulses on pre-neoplastic mammary epithelial cell proliferation. *Cell Proliferation*, 38: 153-63.

Patil, G.D., Briski, K.P. (2005) Lactate is a critical 'sensed' variable in caudal hindbrain monitoring of CNS metabolic stasis. *Amer. J. Physiol.*, 289: R1777-86.

Patil, G.D., Briski, K.P. (2005) Induction of Fos immunoreactivity labeling in forebrain metabolic loci by caudal fourth ventricular administration of the monocarboxylate transporter inhibitor, α -cyano-4-hydroxycinnamic acid. *Neuroendocrinology*, 82: 49-57.

Paranjape, S.A., Kale, A.Y., Briski, K.P. (2006) Habituation of insulin-induced hypoglycemic transcriptional activation of lateral hypothalamic orexin-A-containing neurons to recurring exposure. *Regul. Pept.*, 135: 1-6.

H: Publications during past 3 years

- Kale, A.Y, Paranjape, S.A., Briski, K.P. (2006) Intracerebroventricular administration of the nonsteroidal glucocorticoid receptor antagonist, CP4-72555, prevents exacerbation of hypoglycemia during repeated insulin administration. *Neuroscience*, 140: 555-565.
- Vavaiya, K.V., Paranjape, S.A, Briski, K.P. (2006) Nonuniform monocarboxylate transporter-2 expression in the hindbrain dorsal vagal complex during recurrent insulin-induced hypoglycemia: Impact of gender. *NeuroReport*, 17:1023-1026.
- Kale, A.Y., Vavaiya, K.V., Briski, K.P. (2006) Effects of acute and chronic insulin-induced hypoglycemia on type II glucocorticoid receptor (GR) gene expression in characterized CNS metabolic loci in male rat brain. *Brain Res. Bull.*, 70: 240-244.
- Kale, A.Y, Paranjape, S.A., Briski, K.P. (2007) Site-specific habituation of insulin-induced hypoglycemic induction of Fos immunoreactivity in glucocorticoid receptor (GR)-immunopositive neurons in the male rat brain. *Exper. Brain Res.*, 176: 260-266.
- Kale, A.Y., Vavaiya, K.V., Briski, K.P. (2006) Effects of acute and chronic insulin-induced hypoglycemia on type II glucocorticoid receptor (GR) gene expression in characterized CNS metabolic loci in male rat brain. *Brain Res. Bull.*, 70: 240-244.
- Kale, A.Y, Paranjape, S.A., Briski, K.P. (2007) Type II glucocorticoid receptor involvement in habituated insulin-induced hypoglycemic transcriptional activation of lateral hypothalamic orexin-A-immunopositive neurons. *Neurosci. Res.*, 56(3):309-13.
- Paranjape, S.A., Vavaiya, K., Kale, A.Y, Briski, K.P. (2007) Role of dorsal vagal motor nucleus orexin-A receptor in glycemc responses to acute versus repeated insulin administration. *Neuropeptides*, 41: 111-6.
- Vavaiya, K., Paranjape, S.A., Briski, K.P. (2007) Testicular regulation of neuronal glucose and monocarboxylate transporter gene expression profiles in CNS metabolic sensing sites during acute and recurrent insulin-induced hypoglycemia. *J. Mol. Neurosci.*, 31: 37-46.
- Briski, K.P., Singh S.R. (2007) Hindbrain neuroglucopenia elicits site-specific transcriptional activation of glutamate decarboxylase immunopositive neurons in rat septopreoptic area. *Neuroendocrinology*, (DOI:10.1159/000109663) Published Online: October 9th 2007.
- Nedungadi, T.P., Goleman, W.L., Paranjape, S.A., Kale, A.Y., Briski, K.P. (2007) Effects of estradiol on glycemc and CNS neuronal activational responses to recurrent insulin-induced hypoglycemia in the ovariectomized female rat. *Neuroendocrinology*, 84: 235-243.
- Parihar, M., Vavaiya, K., Briski, K.P. (2007) Estradiol regulates monocarboxylate and glucose transporter gene expression profiles in CNS metabolic sensing sites during acute and recurrent insulin-induced hypoglycemia. *J. Neurosci. Res.*, under revision.
- Nedungadi, T.P. Briski, K.P. (2007) Effects of estradiol on acute and chronic insulin-induced hypoglycemia-associated patterns of arcuate neuropeptide Y, proopiomelanocortin, and cocaine- and amphetamine related-transcript gene expression in the ovariectomized female rat. *Neuroendocrinology*, 86: 270- 276.
- Vavaiya, K., Briski, K.P. (2007) Caudal hindbrain lactate administration alters glucokinase, SUR1, and neuronal substrate fuel transporter gene expression in the dorsal vagal complex, lateral hypothalamic area, and ventromedial nucleus hypothalamus of hypoglycemic male rats. *Brain Research*, 1176: 62-70
- Vavaiya, K., Briski, K.P. (2007) Effects of caudal hindbrain lactate infusion on insulin-induced hypoglycemia and neuronal substrate transporter, glucokinase, and sulfonylurea receptor-1 gene expression in the ovariectomized female rat dorsal vagal complex: Impact of estradiol. *J. Neurosci. Res*, Oct 16; [Epub ahead of print] PMID: 17941059 [PubMed - as supplied by publisher]
- Kale, A.Y, Briski, K.P. (2007) Impact of recurring insulin-induced hypoglycemia on corticotropin-releasing hormone, oxytocin, vasopressin, and glucokinase gene expression in hypothalamic paraventricular nucleus: role of type II glucocorticoid receptors. *J. Neurosci. Res.*, submitted.
- Vavaiya, K.V., Briski, K.P. (2007) Effects of caudal fourth ventricular lactate infusion on hypoglycemia-associated MCT2, GLUT3, GLUT4, GCK, and sulfonylurea receptor-1 gene expression in the ovariectomized female rat LHA and VMH: Impact of estradiol. *J. Mol. Neuroscience*, Dec 15; [Epub ahead of print] PMID: 18084728 [PubMed - as supplied by publisher]

H. Publications during past 3 years

Briski, K.P., Genabai, N.K., Kale, A.Y., Vavaiya, KV. (2007) Type II glucocorticoid receptor-dependent modifications in glucokinase and sulfonylurea receptor-1 gene profiles in the ventromedial hypothalamic nucleus, but not lateral hypothalamic area in response to recurrent insulin-induced hypoglycemia. *J. Neurosci. Res.*, under revision.

Vavaiya, K.V., Briski, K.P. (2007) In Situ Coexpression of Glucose and Monocarboxylate Transporter mRNAs in Metabolic-Sensitive Dorsal Vagal Complex Catecholaminergic Neurons: Transcriptional Reactivity to Insulin-Induced Hypoglycemia (IIH) and Caudal Hindbrain Glucose or Lactate Repletion during IIH. *J. Neuroscience*, submitted.

Nedungadi, T.P.+, Parihar, M.+, Genabai, N.K., Briski, K.P. (2007) Acclimation of hypothalamic arcuate glucokinase gene and protein expression to recurring insulin-induced hypoglycemia: impact of gender. *J. Neuroscience Res.*, in preparation for submission.

Genabai, N.K., Vavaiya, K.V., Briski, K.P. (2007) Adaptation of glucokinase gene expression in the rat dorsal vagal complex in a model for recurrent insulin-induced hypoglycemia: impact of gender. *NeuroReport*; in preparation for submission.

I. Presentations during past 3 years

Paranjape, S.A., Briski, K.P.* Insulin-induced transcriptional activation of lateral hypothalamic orexin-A-immunopositive neurons is attenuated by repetitive exposure. Amer. Diabetes Assoc., Abst. 635 (2005).

Kale, A.Y., Paranjape, S.A., Briski, K.P.* Intracerebroventricular administration of the novel nonsteroidal type II glucocorticoid receptor antagonist, CP4-72555-01, prevents exacerbation of hypoglycemia during repeated insulin administration. Amer. Diabetes Assoc., Abst. 104-R (2005)

Vavaiya, K., Briski, K.P.* Nonuniform monocarboxylate transporter-2 expression in discrete CNS metabolic loci during recurrent insulin-induced hypoglycemia: impact of gender. Amer. Diabetes Assoc., submitted 03/05.

Kale, A.Y., Paranjape, S.A., Briski, K.P.* Recurrent hypoglycemic habituation of glucose counterregulation and neuronal genomic activation in discrete CNS metabolic loci is reversed by the glucocorticoid Type II receptor antagonist, CP472055-01. Soc. Neurosci., Abst. 763.7 (2005).

Singh S.R., Briski, K.P.* Hindbrain neuroglucopenia elicits site-specific transcriptional activation of glutamate decarboxylase immunopositive neurons in rat septopreoptic area. Soc. Neurosci., Abst. 760.1 (2005).

Paranjape, S.A., Kale, A.Y., Vavaiya, K.V., Briski, K.P.* Administration of the orexin A receptor antagonist, SB-334867, into the dorsal motor nucleus of the vagus delays recovery from hypoglycemia. Soc. Neurosci., Abst. 763.12 (2005).

Vavaiya, K.V., Paranjape, S.A., Patil, G.D., Briski, K.P.* Gender-specific adaptation of monocarboxylate transporter expression in discrete CNS metabolic loci during recurrent hypoglycemia. Soc. Neurosci., Abst. 188.11 (2005).

Paranjape, S.A., Kale, A.Y., Vavaiya, K.V., Briski, K.P.* Habituation of lateral hypothalamic area orexin-A (ORX-A) neurons to recurrent insulin-induced hypoglycemia (RIIH). Neuroscience Research Day, LSUHSC-Shreveport (2005).

Kale, A.J., Paranjape, S.A., Briski, K.P.* Pharmacological blockade of central type II glucocorticoid receptors (GR) with the novel nonsteroidal GR antagonist, CP472555, prevents exacerbation of hypoglycemia during repeated insulin administration. Neuroscience Research Day, LSUHSC-Shreveport (2005).

Vavaiya, K., Paranjape, S., Briski, K.P.* Gender based differences in monocarboxylate transporter expression in the hindbrain dorsal vagal complex (DVC) in response to recurrent insulin-induced hypoglycemia (RIIH). Neuroscience Research Day, LSUHSC-Shreveport (2005).

Nedungadi, P.T., Briski, K.P.* Influence of estrogen (E) on neuronal transcriptional activation in key CNS metabolic loci during recurrent insulin-induced hypoglycemia (RIIH). Neuroscience Research Day, LSUHSC-Shreveport (2005).

Genabai, N.K., Paranjape, S.A., Briski, K.P.* Testosterone blunts glucose counterregulatory function during recurrent insulin-induced hypoglycemia (RIIH). Neuroscience Research Day, LSUHSC-Shreveport (2005).

Vavaiya, K., Briski, K.P.* Testicular regulation of monocarboxylate and glucose transporter gene responses to hypoglycemia in CNS metabolic 'sensing' sites. Amer. Diabetes Assoc., Abstract 641-P (2006).

Goleman, W., Briski K.P.* Effects of estradiol on glycemic and counterregulatory responses to recurrent insulin-induced hypoglycemia in ovariectomized female rats. Amer. Diabetes Assoc., abstract 624-P (2006).

Parihar, M., Vavaiya, K., Briski, K.P.* Effects of estradiol on substrate fuel transporter gene expression in metabolic 'sensing' structures in the female rat brain during acute versus recurrent insulin-induced hypoglycemia. Amer. Diabetes Assoc., abstract 634-P (2006).

Kale A., Vavaiya K., Briski, K.P.* Effects of recurrent insulin-induced hypoglycemia (RIIH) on type II glucocorticoid receptor (GR) gene expression in discrete CNS metabolic loci. Amer. Diabetes Assoc., Abst. 628-P (2006).

Nedungadi, T.P., Briski, K.P.* Modulatory effects of estrogen on neuronal activation in CNS autonomic metabolic structures during recurrent insulin-induced hypoglycemia. Amer. Diabetes Assoc., Abst. 632-P (2006).

I. Presentations during past 3 years

Genabai, T., Briski, K.P.* Effects of testosterone on recurrent insulin-induced hypoglycemia (RIIH) in the orchidectomized male rat. Amer. Diabetes Assoc., Abst. 623-P (2006).

Kale, A.J., Paranjape, S.A., Briski, K.P.* Effect of acute and chronic insulin-induced hypoglycemia on type II glucocorticoid receptor (GR) gene expression in characterized CNS metabolic loci. Soc. Neurosci., Abst. 563.16 (2006).

Parihar, M., Briski, K.P.* Effects of estradiol on substrate fuel transporter gene expression in metabolic sensing structures in the ovariectomized female rat brain during acute versus recurrent insulin-induced hypoglycemia. Soc. Neurosci., Abst. 359.16 (2006).

Nedungadi, T.P., Parihar, M., Briski, K.P.* Estrogen regulation of acute and recurrent insulin-induced hypoglycemia (RIIH)-associated patterns of neuropeptide Y gene expression in the ovariectomized female rat. Soc. Neurosci., Abst. 153.19 (2006).

Vavaiya, K.V., Briski, K.P.* Effects of lactate on glucokinase, SUR1, and neuronal substrate fuel transporter gene expression in the rat dorsal vagal complex. Soc. Neurosci., Abst. 744.2 (2006).

Genabai, N.K., Paranjape, S.A., Briski, K.P.* Effects of testosterone on CNS neuronal activation during acute versus recurrent insulin-induced hypoglycemia (RIIH). Soc. Neurosci., Abst. 153.11 (2006).

Neerudu, N., Briski, K.P.* Estrogen modulates caudal hindbrain neuroglucopenia-induced hyperglycemia. Soc. Neurosci., Abst. 153.22 (2006).

Houston, L.M., Rout, B., Dymnikov, A.D., Briski, K.P.*, Glass, G.A. Pseudo-Tomography: Optimizing Reconstruction of 3-Dimensional Images from STIM Data. 19th Conference on the Application of Accelerators in Research and Industry. August 22-25; Invited Oral Presentation; Abst. 394: Session IBA03 (Nuclear Microprobe Applications) (2006).

Nedungadi, P., Parihar, M., Briski, K.P.* Effect of estrogen on acute and recurrent insulin-induced hypoglycemia - associated patterns of arcuate neuropeptide gene expression. Submitted, Neuroscience Research Day, LSUHSC-Shreveport (2006).

Kale, A.Y., Paranjape, S.A., Briski, K.P.* Contribution of central GR to adaptation of glucose counterregulation and neuronal genomic activation to recurrent insulin-induced hypoglycemia. Neuroscience Research Day, LSUHSC-Shreveport (2006).

Neerudu, N.R., Briski, K.P.* Estrogen modulates caudal hindbrain neuroglucopenia-induced hyperglycemia. Neuroscience Research Day, LSUHSC-Shreveport (2006).

Vavaiya, K.V., Briski, K.P.* Effect of lactate on glucokinase, SUR1, and neuronal substrate fuel transporter gene expression profiles in CNS metabolic sensing sites of hypoglycemic male rats. Neuroscience Research Day, LSUHSC-Shreveport (2006).

Genabai, N.K., Paranjape, S.A., Kale, A.Y., Briski, K.P.* Effects of testosterone on CNS neuronal responses to recurrent insulin-induced hypoglycemia (RIIH) in the orchidectomized (ORDX) male rat.

Parihar, M., Briski, K.P.* Effects of testosterone on arcuate neuropeptide and metabolic sensor gene expression during acute and recurrent insulin induced hypoglycemia (RIIH). Neuroscience Research Day, LSUHSC-Shreveport (2006).

J. Present Scholarly Interests and Activities

Mechanisms of Chemosensory Neuronal Adaptation to Recurrent Hypoglycemia: Cellular energy stasis is monitored in discrete sites throughout the body, including the hindbrain dorsal vagal complex (DVC). The oxidizable substrate, L-lactate, is derived from glucose within astrocytes, and released into the extracellular space for neuronal uptake. Our studies show that exogenous lactate infusion into the caudal fourth ventricle during insulin-induced hypoglycemia (IIH) further suppresses blood glucose levels, and alters IIH-associated patterns of DVC neuronal transcriptional activation. DVC catecholaminergic neurons are implicated in metabolic monitoring by evidence for electrophysiological and transcriptional reactivity to substrate fuel imbalance. We have applied quantitative real-time RT-PCR (qscPCR) techniques to individual laser-catapult microdissected neurons to determine if prelabeled tyrosine-hydroxylase (TH)-immunoreactive (ir) neurons express characterized metabolic transducers, e.g. glucokinase (GCK) and the energy-dependent potassium channel, KATP, and if these cells utilize glucose and/or monocarboxylates as substrate fuels. We have gained unique evidence that A2 DVC TH-ir neurons express mRNA encoding the neuronal monocarboxylate transporter, MCT2; the neuronal glucose transporters, GLUT3 and GLUT4; GCK; and the sulfonylurea receptor-1 (SUR1) subunit of KATP. Our data also show that MCT2 gene expression by these neurons is decreased during IIH, whereas GLUT3 and GLUT4 transcripts are increased; and that caudal hindbrain lactate, but not glucose replenishment during IIH upregulates MCT2 and GLUT3 gene expression by these cells. Recurrent insulin-induced hypoglycemia (RIIH) is characterized by CNS habituation to this metabolic stress. Previous work in our laboratory showed that whole-DVC tissue MCT2, GLUT3, and GLUT4 mRNA levels are elevated during RIIH. We hypothesize that hypoglycemia-associated patterns of substrate transporter gene expression by DVC chemosensory catecholaminergic neurons may be correspondingly modified as a consequence of precedent IIH, and that potential augmentation of fuel uptake may be correlated with altered cellular signaling of metabolic deficiency. Our overarching goal is to evaluate the effects of acute versus recurrent IIH on substrate transporter, metabolic transducer, and catecholamine biosynthetic enzyme gene expression in DVC catecholaminergic neurons. Multi-transcriptional profiling of individual immunocytochemically-identified, laserbeam-dissected DVC catecholaminergic neurons will be performed by qscPCR to assess the impact of RIIH on monocarboxylate and glucose transporter mRNA profiles, and to determine if potential modifications in cellular substrate utilization coincide with altered expression of GCK, SUR1, and/or the energy-sensitive catecholamine biosynthetic enzyme, dopamine-beta-hydroxylase.

Novel Delivery Modes for Small Molecule Inhibitors of Medulloblastoma: Medulloblastoma is the most common pediatric brain tumor for which no satisfactory treatments currently exist. While current *in vitro* studies support the potential utility of defined low molecular weight signal transduction inhibitors for targeting aberrant molecular signaling pathways in medulloblastoma cells, the prevailing use of cell culture and xenograft models has not addressed critical issues of optimal drug delivery and biological effectiveness, as well as the possibility of adverse side-effects. This project will utilize an interdisciplinary approach to develop and validate novel nanotechnology-based drug delivery systems for *in vivo* administration of small molecule inhibitors of tumor growth in a whole animal model for medulloblastoma. The distribution and extent of drug uptake by tumorous and normal tissues will be mapped by synchrotron radiation X-ray fluorescence (SRXF) spectrometry, and correlated with drug anti-tumor effectiveness. The overarching goal of the proposed research is to establish the therapeutic efficacy and safety of promising new pharmaceutical methods for *in situ* destruction of medulloblastoma solid tumors. The first specific aim will evaluate net *in situ* medulloblastoma tissue accumulation and biological impact of small molecule signal transduction inhibitors delivered by traditional versus novel means in a transgenic mouse model of medulloblastoma. The high-resolution chemical microanalytical capabilities of SRXF will be utilized to map and quantify tissue and cellular levels of lanthanide-labeled tumor-directed agents in medulloblastoma and surrounding normal cerebellar brain tissue, in order to correlate drug accumulation with anti-tumor biopotency. Ptc1 (+/-) p53 (-/-) transgenic mice, which exhibit 100% incidence and short latency of tumor development, will be treated by intracranial, intracerebroventricular, or systemic delivery of unbound versus nano-packaged or -conjugated small molecule inhibitors of the Sonic Hedgehog cellular signaling pathway. Measures of resultant drug uptake, as determined by photon-induced X-ray fluorescence spectrometry, will be correlated with histological and molecular biological indices of medulloblastoma cell death and tumor regression. This strategy will enable us to identify drug delivery modes and doses that maximize effectiveness of therapeutic action against *in situ* medulloblastoma. The second specific aim will assess the impact of intracranial versus systemic administration of agents targeting molecular pathogenesis of medulloblastoma on established markers of CNS and peripheral organ toxicity. The utility, focus of effect, and relative risk of the anti-medulloblastoma drug delivery paradigms evaluated in the first aim will be investigated by SRXF spectrometric analysis of drug accumulation in noncerebellar areas of the brain, as well as the liver, heart, gonads, lungs, spleen, and bone marrow, followed by histopathological assessment of tissue injury- and cytotoxicity-associated markers in tissue that exhibit significant drug uptake. This work will reveal the extent and potential deleterious effects of medulloblastoma-targeting agents on the structure and function of normal tissues and organs.

K. Present Professional Interests and Activities

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ACCREDITATION COUNCIL FOR PHARMACY EDUCATION

FORM F: Faculty Information

A. Information

Name: Michael D. DeGennaro Date of Birth _____
 Department/Division Basic Pharmaceutical Sciences Licensed Pharmacist? No Yes State GA, LA, SC
 First Title at College Assistant Professor Date Appointed 7/1975
 Current Title Associate Professor, Assistant Dept. Head Date Appointed 2005

B. Percentage activity (totals 100%):

Teaching 50 Scholarship _____ Service _____ Administrative (if applicable) _____

Estimated distribution of workload in the past year (%):

Activity	Per Cent (%)
Teaching:	
Didactic	50
Experiential	0
Practice	0
Scholarly Activity	10
Committee Assignments	15
Student Advising	0
Faculty Mentoring	5
Administration	20
Other:	
Total	100%

C. Teaching Responsibilities: List teaching responsibilities, during academic year of on-site evaluation; if different from previous years indicate (e.g. courses taught, include team teaching, practice experiences)

Pharmceutics I (3 hrs lecture/3 hrs laboratory – 3 sections)
 Pharmaceutics II (3 hrs lecture)

D. Post-Secondary/Professional Education

Augusta Jr. College	1961-1993	Pre-Pharmacy
College	Dates Attended	Degree Earned
University of Georgia	1964-1966	B.S. Pharmacy
College	Dates Attended	Degree Earned

E. Graduate Education (Master of Science, Doctor of Philosophy)

University of Georgia	1968-1972	Doctor of Philosophy
College	Dates Attended	Degree Earned
College	Dates Attended	Degree Earned

F. Post-Graduate Training (Post-Doctoral training, Residency, Fellowship)

Institution	Dates Attended	Position
Institution	Dates Attended	Position

G. Previous Academic Positions

Creighton University	1972-1975	Assistant Professor
Institution	Dates of Employment	Position
Institution	Dates of Employment	Position

H: Publications during past 3 years

Ning Li, DeGennaro MD, Liebenberg W, Tiedt LR, Zahn AS, Pishko MV and De Villiers MM.
“Increased dissolution and physical stability of micronized nifedipine particles encapsulated with a biocompatible polymer and surfactants in a wet ball milling process,” Die Pharmazie, 7(2006).

I. Presentations during past 3 years

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J. Present Scholarly Interests and Activities

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K. Present Professional Interests and Activities

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ACCREDITATION COUNCIL FOR PHARMACY EDUCATION

FORM F: Faculty Information

A. Information

Name: Khalid A El Sayed Date of Birth _____
 Department/Division Basic Pharmaceutical Sciences Licensed Pharmacist? No Yes State _____
 First Title at College Visiting Professor Date Appointed 8/2001
 Current Title Assistant Professor Date Appointed 10/2002

B. Percentage activity (totals 100%):

Teaching 45 Scholarship 45 Service 10 Administrative (if applicable) 0

Estimated distribution of workload in the past year (%):

Activity	Per Cent (%)
Teaching:	
Didactic	45
Experiential	0
Practice	0
Scholarly Activity	53
Committee Assignments	2
Student Advising	0
Faculty Mentoring	0
Administration	0
Other:	
Total	100%

C. Teaching Responsibilities: List teaching responsibilities, during academic year of on-site evaluation; if different from previous years indicate (e.g. courses taught, include team teaching, practice experiences)

Pharmacy 418, Chemotherapeutics, Course Instructor, teaching 55% of course content
 Pharmacy 566, Medicinal Chemistry Analysis, Graduate –level course, Course Instructor, teaching 100% of its contents
 Pharmacy 421, herbal Remedies, Course Instructor, teaching 85% of course content

D. Post-Secondary/Professional Education

Mansoura University, Egypt	9/78-5/83	B.S. Pharmacy
College	Dates Attended	Degree Earned
College	Dates Attended	Degree Earned

E. Graduate Education (Master of Science, Doctor of Philosophy)

Mansoura University, Egypt	4/85-9/89	M.Sc.
College	Dates Attended	Degree Earned
Mansoura University, Egypt	10/89-9/93	Ph.D.
College	Dates Attended	Degree Earned

F. Post-Graduate Training (Post-Doctoral training, Residency, Fellowship)

University of Mississippi	4/95-12/98	Postdoctoral Associate
Institution	Dates Attended	Position
University of Mississippi	8/00-8/01	Research Associate
Institution	Dates Attended	Position

G. Previous Academic Positions

University of Mississippi	2000-2001	Research Associate
Institution	Dates of Employment	Position
Mansoura University, Egypt	2003-present	Professor (Open Sabbatical Leave)
Institution	Dates of Employment	Position

H: Publications during past 3 years

- 1- El Sayed KA. Natural products as angiogenesis modulators. *Mini Reviews in Medicinal Chemistry*, 2005, 5, 971-993.
- 2- El Sayed KA, Youssef DTA, Marchetti D. 2006, Bioactive natural and semisynthetic latrunculins. *Journal of Natural Products*. 69, 219-223.
- 3- Sawant SS, Youssef DTA, Mayer AMS, Sylvester PW, Wali V, Arant ME, El Sayed KA. 2006. Anticancer and anti-inflammatory sulfur-containing semisynthetic derivatives of sarcophine. *Chemical and Pharmaceutical Bulletin*, 69, 1010-1013.
- 4- Sawant SS, Youssef DTA, Reiland J, Ferniz M, Marchetti D, El Sayed KA. 2006 Biocatalytic and antimetastatic studies on the Red Sea soft coral *Sarcophyton glaucum* terpenes. *Journal of Natural Products*, 69, 1010-1013.
- 5- Sawant SS, Youssef DTA, Sylvester PW, Wali V, El Sayed KA. 2007. Antiproliferative sesquiterpenes from the Red Sea soft coral *Sarcophyton glaucum*. *Natural Product Communications*, 2, 117-119.
- 6- Arif JM, Sawant SS, El Sayed KA, Kunhi M, Subramanian MP, Siddiqui YM, Youssef DTA, Al-Hussain K, Mohammed N, Al-Ahdal MN, Al-Khodairy F. 2007. Antiproliferative potential of sarcophine and its semisynthetic sulfur-containing derivatives against human mammary carcinoma cell lines. *Journal of Natural Medicines*, 61, 154-158.
- 7- Orabi KY, El Sayed KA. 2007. Biocatalytic studies of the furanocoumarins angelicin and chalepensis. *Natural Product Communications*, 2, 565-569.

H: Publications during past 3 years

- 8- Jain S, Laphookhieo S, Shi Z, Fu L, Akiyama S, Chen ZS, Youssef DTA, van Soest RWM, El Sayed KA. 2007. Reversal of P-glycoprotein-mediated multidrug resistance by sipholane triterpenoids. *Journal of Natural Products*. 70, 928-931.
- 9- El Sayed KA, Sylvester PW. 2007. Biocatalytic and semisynthetic studies of the anticancer tobacco cembranoids. *Expert Opinion in Investigational Drugs*. 16, 877-887.
- 10- Jain S, Shirode A, Yacoub S, Barbo A, Sylvester PW, Huntimer E, Halaweish F, El Sayed KA. 2007. Biocatalysis of the anticancer sipholane triterpenoids. *Planta Medica*. 70, 591-596.
- 11- Shi Z, Jain S, Kim IW, Peng XX, Abraham, I, Fu L, Youssef DT, El Sayed KA, Ambudkar SV, Gottesman MM, Chen ZS. 2007. Sipholenol A, a marine-derived sipholane triterpene, potently reverses P-glycoprotein-mediated (ABCB1)-mediated multidrug resistance in cancer cells. *Cancer Science*. 98, 1373-1380.
- 12- Sylvester PW, Wali VB, Shirode AB, Bachawal SV, El Sayed KA. 2007. Tocotrienols are the most potent anticancer agents in the vitamin E family of compounds. *Curr. Research in Cancer*, 1, 55-75.
- 13- El Sayed KA, Khalil AA, Yousaf, M., Labadie G., Mahesh K. Gundluru M.K., Franzblau S.G., Mayer AMS., Avery M., Hamann M.T. 2007. Semisynthetic studies of the manzamine alkaloids. *Journal of Natural Products*. (In Press).
- 14- Ibrahim SRM, Badr JM, El Sayed KA, Youssef DTA. 2007. A new cytotoxic sesquiterpene and three anti-inflammatory flavonoids of the Egyptian *Tanacetum santolinoides*. *Natural Product Communications* 2, 1071-1074.
- 15- El Sayed KA, Laphookhieo S, Prestridge J, Wali VB, Shirode AB, Sylvester PW. 2007. Semisynthetic and biocatalytic optimization of the anticancer tobacco (1S,2E,4S,6R,7E,11E)-2,7,11-cembratriene-4,6-diol. *Journal of Natural Products* (In Press).
- 16- El Sayed KA, Laphookhieo S, Baraka HN, Yousaf M, Hebert A, Bagaley D, Rainey FA, Muralidharan A, Thomas S, Shah G. Biocatalytic and semisynthetic optimization of the anti-invasive tobacco (1S,2E,4R,6R,7E,11E)-2,7,11-cembratriene-4,6-diol. *Bioorganic Medicinal Chemistry*. (Accepted 12/07).
- 17- El Sayed KA, Shallal HM, Khanfar M, Muralidharan A, Thomas S, Youssef DTA, Zhou YD, Nagle DG, Shah G. Latrunculin A and Its C-17-O-Carbamates Inhibit Prostate Cancer Invasion and Breast Cancer HIF-1 Activation. *Journal of Natural Products*. (Accepted 12/07).

I. Presentations during past 3 years

- 1- El Sayed, K., Sawant, S., Marchetti, D. Latrunculins revisited: New natural and semisynthetic bioactive latrunculins. LBRN 3rd Annual Retreat, Lafayette, Louisiana, February 2005.
- 2- Sawant S., Barbo A., Bhandare R., Sylvester P., El Sayed, K. Optimization of anticancer marine natural products using biocatalytic and semisynthetic transformations. North Louisiana Partnership for Innovation Regional Research Day, Shreveport, Louisiana, April 2005.
- 3- Barbo, A., Sawant, S., Youssef, D., El Sayed, K. Latrunculins revisited: New semisynthetic bioactive latrunculins. 5th Annual Student Research Symposium, ULM, Monroe, LA, April 27, 2005 (Second place winner, Undergraduate student poster).
- 4- McBride, M., McBride, T., El Sayed, K. Bioconversion Studies of the Bioactive Marine Sesterterpene Palinurin. 5th Annual Student Research Symposium, ULM, Monroe, LA, April 27, 2005 (Second place winner, Undergraduate student poster).
- 5- Bhandare, R., Mayer, A., El Sayed, K. Optimization of anti-inflammatory curcuphenols using chemical modifications. 5th Annual Student Research Symposium, ULM, Monroe, LA, April 27, 2005.
- 6- Sawant, S., Sylvester, P., Avery, M., Desai, P., Youssef, D., Mayer, A., El Sayed, K. Development of Bioactive Leads from the Red Sea Soft Coral Sarcophyton glaucum Cembranoids. 5th Annual Student Research Symposium, ULM, Monroe, LA, April 27, 2005. (First place winner, graduate student podium).
- 7- Sawant, S., Sylvester, P., Avery, M., Desai, P., Youssef, D., El Sayed, K. Semisynthetic and biocatalytic studies of cembranoids from the Red Sea soft coral Sarcophyton glaucum. 32nd MALTO Medicinal Chemistry-Pharmacognosy Meeting, Oxford, MS, May 2005.
- 8- Bhandare, R., El Sayed, K. Synthesis and semisynthetic studies of the bioactive marine natural sesquiterpene curcuphenol. 32nd MALTO Medicinal Chemistry-Pharmacognosy Meeting, Oxford, MS, May 2005.
- 9- Barbo, A., Sawant, S., Youssef, D., El Sayed, K. Latrunculins revisited: New natural and semisynthetic bioactive latrunculins. 46th Annual Meeting of the American Society of Pharmacognosy, July 2005, Oregon State University, Corvallis, Oregon.
- 10- El Sayed, K., Galal, A., Yacoub, S., Huntimer, E., Halaweish, F. Biocatalytic and semisynthetic optimization of the antiangiogenic and anti-inflammatory marine sipholane triterpenes. 46th Annual Meeting of the American Society of Pharmacognosy, July 2005, Oregon State University, Corvallis, Oregon.
- 11- Sawant S., Sylvester, P., Avery, M., Desai, P., Youssef, D., El Sayed, K. Semisynthetic and biocatalytic studies of cembranoids from the Red Sea soft coral Sarcophyton glaucum. 46th Annual Meeting of the American Society of Pharmacognosy, July 2005, Oregon State University, Corvallis, Oregon.
- 12- Bhandare, R., Mayer, A., El Sayed, K. Synthesis and semisynthetic studies of the bioactive marine natural sesquiterpene curcuphenol. 46th Annual Meeting of the American Society of Pharmacognosy, July 2005, Oregon State University, Corvallis, Oregon.
- 13- Sawant, S., Barbo, A., Brode, R., Yousef, M., Jain, S., Youssef, D., Bagaley, D., Rainey, F., Marchetti, D., El Sayed, K. Novel marine-derived antibiotic and anticancer leads. Annual Louisiana Biomedical Research Network Meeting, February 10-12, 2006, Baton Rouge, LA
- 14- Sawant, S., Youssef, D., Sylvester, S., Marchetti, D., El Sayed, K. Antimetastatic terpenes from the Red Sea Soft Coral Sarcophyton glaucum. 4th Annual Louisiana Biomedical Research Network Meeting, February 10-12, 2006, Baton Rouge, LA
- 15- El Sayed, K., Barbo, A., Brode, R., Bagaley, D., Rainey FA. A study of symbiotic microorganisms associated with the Red Sea sponges *Negombata magnifica* and *Siphonochalina siphonella*. Marine Natural Products Gordon Research Conference, February 26-March 2, 2006, Ventura, CA.
- 16- Prestridge, J., Phadnis, A., Yousaf, M., Wali, V., Sylvester, P., El Sayed, K. Semisynthetic Studies of the Anticancer Tobacco Cembranoid (1S,2E,4R,6R,7E,11E)-2,7,11-Cembratriene-4,6-diol. 6th ULM Student Research Symposium, April 26, 2006.
- 17- Jain, S., Youssef, D., El Sayed, K. Study of the Bioactive Marine Natural Products Triterpenoid Sipholanen. 6th ULM Student Research Symposium, April 26, 2006.
- 18- Barbo, A., Brode, R., Yacoub, S., Bagaley, D., Rainey, F., El Sayed, K. A Study of the Red Sea Sponge *Siphonochalina siphonella*: Biocatalysis of Sipholenol A and Bioactive Symbiotic Bacterial Secondary Metabolites. 6th ULM Student Research Symposium, April 26, 2006.
- 19- Sawant, S., Youssef, D., Sylvester, S., Marchetti, D., El Sayed, K. Antimetastatic, Semisynthetic, and Biocatalytic Studies of Marine Cembranoids. 6th ULM Student Research Symposium, April 26, 2006.
- 20- El Sayed, K., Phadnis, A., Yousaf, M., Prestridge, J., Sawant, S., Wali, V., Sylvester P. Biocatalytic and semisynthetic studies of anticancer tobacco cembranoids. North Louisiana Partnership for Innovation Regional Research Day, Shreveport, Louisiana, May 1, 2006.
- 21- Sawant, S., Youssef, D., Sylvester, S., Marchetti, D., El Sayed, K. Towards optimizing anticancer terpenes from the Red Sea Soft Coral Sarcophyton glaucum North Louisiana Partnership for Innovation Regional Research Day, Shreveport, Louisiana, May 1, 2006.
- 22- Jain, S., Barbo, A., Youssef, D., El Sayed, K. Chemical and biocatalytic transformation studies of the Bioactive Marine-Derived triterpenoid sipholanen. North Louisiana Partnership for Innovation Regional Research Day, Shreveport, Louisiana, May 1, 2006.

I. Presentations during past 3 years

- 23- El Sayed, K., Yousaf, M., Prestridge, J., Sawant, S., Wali, V., Sylvester, P., Steffen, R., Mueller, W. Biocatalytic and semisynthetic studies of anticancer tobacco cembranoids. 47th Annual Meeting of the American Society of Pharmacognosy, August 5-9, 2006, Arlington, Virginia.
- 24- Sawant, S., Youssef, D., Sylvester, S., Marchetti, D., El Sayed, K. Towards optimizing anticancer terpenes from the Red Sea Soft Coral Sarcophyton glaucum. 47th Annual Meeting of the American Society of Pharmacognosy, August 5-9, 2006, Arlington, Virginia.
- 25- H Shallal, K El Sayed. Computer-assisted design of anticancer marine macrolide latrunculins. Annual Meeting South Central Chapter of the Society of Toxicology, October 12-13, 2006, Monroe, Louisiana.
- 26- S. Jain, A. Barbo, S. Yacoub, A. Shirode, K.A. El Sayed, and P.W. Sylvester. Biocatalytic study of bioactive marine natural products: Triterpenoid siphonanes. Annual Meeting South Central Chapter of the Society of Toxicology, October 12-13, 2006, Monroe, Louisiana.
- 27- S Laphookhieo, I Famakinwa, M Yousaf, A Shirode, V Wali, P Sylvester and K El Sayed. Biocatalytic and semisynthetic optimization of the anticancer tobacco cembranoids. Annual Meeting South Central Chapter of the Society of Toxicology, October 12-13, 2006, Monroe, Louisiana.
- 28- El Sayed KA. Anti-invasive and antiangiogenic marine natural products. First Kuwait Pharmaceutical Sciences Annual Meeting, Kuwait, December 11-14, 2006, Kuwait. (Invited Keynote Speaker).
- 29- El Sayed KA. Anticancer marine natural products. 5th Louisiana Biomedical Research Network Meeting, January 26-28, 2007, Bossier City, Louisiana.
- 30- Mudit M, Prestridge J, A. Muralidharan, Thomas S, Shah G, El Sayed K. Anti-invasive hydantoin from the Red Sea sponge Hemimycala Arabica. 5th Louisiana Biomedical Research Network Meeting, January 26-28, 2007, Bossier City, Louisiana.
- 31- El Sayed KA, Shallal H, Mudit M, Prestridge J, A. Muralidharan, Thomas S, Shah G. Marine natural products are potential source for novel drugs for the treatment of metastatic prostate cancer. American Association for Cancer Research Annual Meeting, April 14-18, 2007, Los Angeles California.
- 32- Shi Z, Jain S, Kim I, Peng XX, Abraham I, Fu L, Youssef DTA, El Sayed KA, Ambudkar S, Chen ZS. Siphonol A, a marine-derived siphonane triterpene, potently reverse P-glycoprotein mediated MDR in cancer cells. American Association for Cancer Research Annual Meeting, April 14-18, 2007, Los Angeles California.
- 33- Mudit Mudit, Anbalagan Muralidharan, Shibu Thomas, Girish Shah, Khalid El Sayed. Anti-invasive hydantoin from the Red Sea sponge Hemimycala arabica. ULM 7th Annual Student Research Symposium. April 18, 2007, Monroe, Louisiana.
- 34- Sandeep Jain, Amit Shirode, Ashley Barbo, Zhi Shi, Zhe-Sheng Chen, Diao T.A. Youssef, Paul Sylvester, Khalid El Sayed. Anticancer potential of siphonane triterpenoids from the marine sponge Callyspongia siphonella. ULM 7th Annual Student Research Symposium. April 18, 2007, Monroe, Louisiana.
- 35- Ahmed Orabi, Paul Sylvester, Vikram Wali, Khalid El Sayed. Chemistry and pharmacology of palm oil tocotrienol rich fraction. The 34th Annual MALTO Medicinal Chemistry-Pharmacognosy Meeting, May 20-22, 2007, Monroe, Louisiana.
- 36- Sandeep Jain, Zhi Shi, Zhe-Sheng Chen, Khalid El Sayed. Reversal of P-glycoprotein-mediated multidrug resistance by siphonane triterpenoids. The 34th Annual MALTO Medicinal Chemistry-Pharmacognosy Meeting, May 20-22, 2007, Monroe, Louisiana.
- 37- Mudit Mudit, Anbalagan Muralidharan, Shibu Thomas, Girish Shah, Khalid El Sayed. Isolation and structure-activity relationship study of the marine-derived phenylmethylehydantoin. The 34th Annual MALTO Medicinal Chemistry-Pharmacognosy Meeting, May 20-22, 2007, Monroe, Louisiana.
- 38- Hassan Shallal, Paige Newman, Anbalagan Muralidharan, Shibu Thomas, Girish Shah, Diao Youssef, Khalid El Sayed. Semisynthetic optimization of the anti-invasive marine macrolide latrunculins. The 34th Annual MALTO Medicinal Chemistry-Pharmacognosy Meeting, May 20-22, 2007, Monroe, Louisiana.
- 39- Ahmed Orabi, Paul Sylvester, Vikram Wali, Khalid El Sayed. Biocatalytic studies of the anticancer palm oil tocotrienols and tocopherols. 48th Annual Meeting of the American Society of Pharmacognosy, July 14-18, 2007, Portland, Maine.
- 40- Mudit Mudit, Anbalagan Muralidharan, Shibu Thomas, Girish Shah, Khalid El Sayed. Isolation and synthesis of potential lead compounds from the Red Sea sponge Hemimycala arabica. 48th Annual Meeting of the American Society of Pharmacognosy, July 14-18, 2007, Portland, Maine.
- 41- Sandeep Jain, Zhi Shi, Zhe-Sheng Chen, Khalid El Sayed. Reversal of P-glycoprotein-mediated multidrug resistance by siphonane triterpenoids. 48th Annual Meeting of the American Society of Pharmacognosy, July 14-18, 2007, Portland, Maine.

Undergraduate Presentations

- 1- Joshua Miller, Paul Sylvester, Khalid El Sayed, 2003. "Biocatalysis studies of palm oil α -tocopherol and α -tocotrienol". 30th MALTO Medicinal Chemistry-Pharmacognosy Meeting, Little Rock, Arkansas. May 2003.
- 2- Samir Yacoub, Khalid El Sayed, 2003. "Chemical transformation studies of mitraphylline and uncarine C, the major Cat's Claw alkaloids". 30th MALTO Medicinal Chemistry-Pharmacognosy Meeting, Little Rock, Arkansas May 2003.
- 3- Joshua Miller, Paul Sylvester, Khalid El Sayed, 2003. "Biocatalysis studies of palm oil α -tocopherol and α -tocotrienol". 3rd Student Research Symposium, ULM, Monroe, LA, April 2, 2003.

I. Presentations during past 3 years

- 4- Raghda Elsayed, Khalid El Sayed, and Fred Rainey. 2004 "Bioactive aromatic nitrogenated secondary metabolites from the marine derived bacterium *Bacillus cereus*". 4th Student Research Symposium, ULM, Monroe, LA, April, 2004.
- 5- Samir Yacoub, Khalid El Sayed, Fathi Halaweish, and E. Huntimer. 2004 "Chemical and microbial transformation studies of the bioactive marine natural products sipholane triterpenes". 4th Student Research Symposium, ULM, Monroe, LA, April 2004. (Best Undergraduate Poster Award).
- 6- Ashley Barbo, Swapnali Sawant, Daa Youssef, and El Sayed, K. Latrunculins revisited: New semisynthetic bioactive latrunculins. 5th Annual Student Research Symposium, ULM, Monroe, LA, April 2005 (Second place winner, Undergraduate student poster).
- 7- Mark McBride, Theresa McBride, and El Sayed, K. Bioconversion Studies of the Bioactive Marine Sesterterpene Palinurin. 5th Annual Student Research Symposium, ULM, Monroe, LA, April 2005 (Second place winner, Undergraduate student poster).
- 8- Boakye E., Bagaley, D., Rainey, F., El Sayed, K. Novel Anticancer Phenazines from the Symbiotic Marine Actinomycete *Pelagibacter* Species. 6th ULM Student Research Symposium, April 26, 2006.
- 9- Prestridge, J., Yousaf, M., Wali, V., Sylvester, P., El Sayed, K., Steffen, R., Mueller, W. Semisynthetic studies of the anticancer tobacco cembranoids. North Louisiana Partnership for Innovation Regional Research Day, Shreveport, Louisiana, May 1, 2006.
- 10- Dalia Abdelhalim, Anne Hebert, A. Muralidharan, Shibu Thomas, Girish Shah, and Khalid El Sayed. Biocatalytic study of tobacco cembranoid (1S,2E,4R,6R,-7E,11E)-2,7,11-cembratriene-4,6-diol. ULM 7th Annual Student Research Symposium. April 18, 2007, Monroe, Louisiana. (Best Undergraduate Poster Award).
- 11- Sadegh Ramezani, Amit Shirode, Vikram Wali, Girish Shah, Paul Sylvester, and Khalid El Sayed. Biocatalytic study of tobacco cembranoid (1S,2E,4S,6R,-7E,11E)-2,7,11-cembratriene-4,6-diol-6-O-acetate. The 34th Annual MALTO Medicinal Chemistry-Pharmacognosy Meeting, May 20-22, 2007, Monroe, Louisiana.
- 12- Justin Prestridge, Anbalagan Muralidharan, Amit Shirode, Shibu Thomas, Vikram Wali, Girish Shah, Paul Sylvester, and Khalid El Sayed Semisynthetic studies of the anticancer tobacco cembranoids. The 34th Annual MALTO Medicinal Chemistry-Pharmacognosy Meeting, May 20-22, 2007, Monroe, Louisiana.

J. Present Scholarly Interests and Activities

1. Cancer: The problem. Cancer is the second most common cause of death in the US, accounting for one of every four deaths. In 2007, more than 500,000 Americans are expected to die of cancer, more than 1,500 people a day. The high incidence and death rate of various cancer types emphasize the need for new strategies and drug leads to combat this pandemic disease.
2. Natural products as a unique drug resource. Nature has been and still is the single most important source of drugs or drug precursors. Approximately half of all modern pharmaceutical agents are derived from or are modeled on natural products. The majority of the natural product-based drugs including cyclosporin, paclitaxel, and camptothecin derivatives were first discovered by traditional cell-based in vitro assays before their real molecular biological targets were identified.
3. Marine natural products. Seas cover over 70% of the earth. Total global biodiversity is 3-500 x 10⁶ species of prokaryote and eukaryote organisms. Of these, marine macrofauna comprise an estimated range of 0.5-30 x 10⁶ species which represents a broader range of taxonomic diversity than that found in the traditional source of natural products, the terrestrial environment. Marine natural products display an extraordinary chemical and pharmacological scope. Several marine-derived or marine-related drugs are currently in preclinical or clinical evaluation, including seventeen compounds as anticancer agents. Only the analgesic α -conotoxin made its way to the market as the first marine-derived drug in clinical use.
4. Biocatalysis. Biocatalysis is the use of growing microbial cultures, enzymes, or immobilized cells to enhance the bioactivity of a starting material through induction of stereospecific reactions. The use of biocatalysis to generate new chiral derivatives, and increase the efficacy of drugs by metabolic activation is well documented. Biocatalysis offers several advantages, including mild reaction conditions, highly stereo-, regio-, and chemoselective, unique and diverse chemistry, and environmental safety. The use of marine microorganism for bioremediation and biodegradation of environmentally hazardous compounds is well known. We recently introduced the concept of using marine microbials as biocatalysts for optimization of bioactive natural product scaffolds.

J. Present Scholarly Interests and Activities

5. Marine natural products research program at ULM. The ultimate goal of this program is to discover, optimize, design, and develop prototype anticancer small molecule leads of marine origin. Targeted anticancer activities include inhibition of tumor cell invasion, metastasis, migration, angiogenesis, proliferation, HIF-1, and MDR P-glycoprotein. Biocatalytic and semisynthetic approaches are used to achieve the abovementioned goal. Due to the broad nature of the Department of Basic Pharmaceutical Sciences, our program became so unique in merging comprehensive traditional and state-of-the-art-natural products chemistry, medicinal Examples of ongoing projects are listed below.

Cembranoids. Four papers reporting several semisynthetic and biocatalytic products of sarcophine and 2-epi-16-deoxysarcophine with enhanced anticancer activities were published between 2004-2006 (Please see publication list in the attached curriculum vitae, page 5-10). We reported for the first time the anti-metastatic activity of cembranoids. Collaborators in this project include ULM's Dr. Paul Sylvester, Dr. Alejandro Mayer, Midwestern University, Illinois, Dr. Dario Marchetti, LSU Veterinary Medicine, and Dr. Jamal Arif, Integral University, Lucknow, India. Research in the area of marine cembranoid led our group to open a new research direction on tobacco cembranoids as described below. Recent direction in this area will focus on the unique ability of these compounds to inhibit phospholipase A2 (PA2) group. This will be interesting to our group since PA2 became an important target for cancer chemotherapy specially in prostate and breast tumors.

Tobacco cembranoids: A new research horizon inspired by marine cembranoids: The economic importance of tobacco as agricultural crop and its associated health hazards are not arguable. In 2006, about 334,150 acres in the US were planted and produced 743,098 thousand tobacco pounds. This figure was 36,070 acres and 95,820 thousand pounds higher than 2005. Annual tobacco industry marketing expenditures nationwide is \$15.4 billion. The economic importance of tobacco as an agricultural crop used recreationally for smoking, chewing and dipping is significant. Developing tobacco as a source of anticancer agents would then be important economically and medicinally. "Development of the 4R,6R-cembratrienediol as a neuroprotective therapy for the delayed damage of stroke" is a recent Small Business Innovation Research project was submitted to the NIH this year by Professor Ferchmin, Universidad Central del Caribe, Puerto Rico, and Neuroprotection for Life Corp. (NeuroLife). The same group has already received two patent awards on the same topic. This clearly shows the potential of tobacco cembranoids as potential drug candidates. Our data indicate a very promising anticancer activity and selectivity of tobacco cembranoids against malignant +SA mammary epithelial cells at a 20 μ M dose and human highly metastatic prostate PC-3M and pancreatic cancer cell lines at 10-20 nM dose in MTT and Matrigel assays. Collaborators in this project; El Sayed, Sylvester & Shah filed a 3-years pending proposal to Philip Morris, USA, Inc. and filed an invention report entitled "anticancer tobacco cembranoids". The ULM College of Pharmacy has graciously accepted to pay fees for this patent. One manuscript accepted for publication in Journal of Natural Products and other manuscript is being proofed by Dr. Fredrick Rainey, of LSU and will be submitted for publication this month (publication numbers 58 and 59, CV, page 10). Research on tobacco cembranoids is wide-open in the areas of cancer and neurodegenerative diseases.

Sipholanones: The sipholane triterpene sipholenol A, from the Red Sea sponge *Callyspongia siphonella*, potentiated the cytotoxicity of several P-gp substrate anticancer drugs including colchicine, vinblastine, and paclitaxel, but not non-P-gp substrate cisplatin, and significantly reversed the multidrug resistance of cancer cells KB-C2 and KB-V1 in a concentration-dependent manner. Sipholenol A efficiently inhibited the function of P-glycoprotein through direct interaction and therefore, sipholane triterpenoids were proposed as a novel class of potential P-glycoprotein inhibitors for the treatment of MDR in P-glycoprotein overexpressing tumors. We published 3 papers so far on the sipholanones in collaboration with Dr. Sylvester, Dr. Chen, St. John's University, and Dr. Halaweish of South Dakota State University (Publications number 51, 53, and 54, curriculum vitae, page 9). The sipholane triterpenoids are novel potential P-gp reversal leads appropriate for further future optimization. An R15 proposal (A Study of Symbiotic Bacteria Associated with The Sipholane-Producing Red Sea Sponge *Callyspongia siphonella*) submitted this October to the NIH AREA mechanism.

Latrunculins: We reported the anti-angiogenic and anti-metastatic activities of latrunculin B and analogs for the first time: Bioactive natural and semisynthetic latrunculins, *Journal of Natural Products*, 2006; 69:219-223. Our research is now focused on Latrunculin A. We prepared several 17-O-carbamate analogs of latrunculin A which potently inhibited hypoxia inducible factor (HIF-1) activation in breast and prostate cancer cells. HIF-1 is a transcription factor that regulates expression of vascular endothelial growth factor (VEGF), a protein responsible for angiogenesis-dependent tumor growth. Based on this finding, we hypothesized that latrunculin A analogs could possess potential anti-angiogenic activity. Latrunculin A and carbamates also showed potent anti-invasive activity against the highly aggressive prostate cancer cell line PC-3M. This manuscript was submitted this month for publication in *Journal of Natural Products* (Publication number 60, CV page 10). This work was the result of collaboration of our laboratory with Dr. Girish Shah and Dr. Dale Nagle of University of Mississippi. Optimization of latrunculin A using rational semisynthetic and biocatalytic methods is currently in progress. The goal is to minimize its actin-binding affinity which should

J. Present Scholarly Interests and Activities

reduce its toxicity. Other collaborative project with Dr. Liu is currently progressing. In this project, we discovered the ability of N-substituted latrunculins to sensitize adriamycin-resistant MCF-7 without any cytotoxic effects on normal cells. Targeting microfilament became a new trend in cancer chemotherapy. Fragment-based, small molecule bioisostere design and mechanistic studies of latrunculins could result in breakthrough entities for treatment of breast and prostate tumors.

Hydantoin: In collaboration with ULM's Dr. Girish Shah, we observed the potent anti-invasive activities of small hydantoin molecules isolated from the Red Sea *H. arabica*. Originally, we proposed these compounds as simpler bioisosteres of latrunculins. Phenylmethylenehydantoins were evaluated in vivo using orthotopic xenografts of PC-3M cells in nude mice and trangenic model. They reduced the growth of orthotopic tumors significantly and completely prevented the formation of distant metastases in bone, lungs, liver, brain and other organs. More than 40 phenylmethylenehydantoins were synthesized in one step simple, selective, and cost effective reactions. Comprehensive structure-activity relationship (SAR) optimization was conducted. Few analogs showed 4-6 folds enhancement of in vitro and in vivo activities in nude and transgenic mice models in Dr. Shah's laboratory. Molecular modeling and CoMFA-derived QSAR studies using SYBYL 7.3.4 suggested additional number of active analogs. This topic was submitted to DOD IDEA, as invention report for patenting, and we plan to submit this project February 2008 as an R01 NIH proposal. Plans for publication of two manuscripts are currently underway. Discovery of phenylmethylenehydantoins in Dr. El Sayed and Dr. Shah's ULM laboratories may lead to the development of a drug for treatment of prostate cancer. Future directions include exact protein target identification through chemical hyphenation of the parent hydantoin with fluorescent dye, mimicking a similar procedure used for paclitaxel, application CoMFA QSAR analysis and comparison of virtual and laboratory activity of suggested hydantoin analogs, preclinical evaluation, pharmacokinetic, metabolism, and bioavailability studies.

Marine microbials: Marine microorganisms are the most diverse and renewable resources of new compounds, which are very likely to have biological activity including anticancer or anti-infective effects. Recent literature witnessed success in culturing diverse marine symbiotic microorganisms, which were able to produce marine secondary metabolites in vitro. One-hundred twenty bacterial/actinomycete symbiotic species were isolated from the sponges *N. magnifica* and *S. siphonella*. We selected *Pelagiomycetes*, *Pontibacillus*, *Microbacterium*, and *Kocuria* species for large-scale fermentations. We isolated new and known diketopiperazines from 8L fermentation of *Kocuria* sp. We isolated pelagiomycin A, griseolitic acid, and a new phenazine alcohol from *P. variabilis*. We also isolated the known neuroprotective N-acetyl indoleethylamine, and N-acetyltyramine from *Pontibacillus* sp. Recently, we invented the unprecedented use of the symbiotic marine bacteria as biocatalysts to bioactive natural products scaffolds. This gave us the opportunity to generate new anti-invasive tobacco cembranoids. The use of these effective biocatalysts for generation of more bioavailable and metabolically stable palm oil tocotrienols is currently underway.

Molecular modeling: The PI established a small molecular modeling laboratory equipped with two DELL desktop workstations each equipped with a 1.8 GHz Intel® Xeon® processor running the Red Hat Enterprise Linux (version 4) operating system and full features SYBYL 7.3.4 suit of programs (Tripos Discovery Informatics, St. Louis, Missouri). Last summer, two graduate students sent to Ole Miss to train in Dr. Mitchell Avery's Laboratory at Ole Miss on this software. Both students started to train other interested students and postdoctoral fellow. We started to routinely use this important and powerful computational software to justify and empower our research papers and proposals. All future projects will begin with using molecular modeling and finding a relevant target protein model before standing on the bench for further experiments. This technology will also be used for professional pharmacy students, especially those enrolled in the elective Pharmacy 465, Medicinal Chemistry Research Problems.

K. Present Professional Interests and Activities

Professional Memberships:

American Society of Pharmacognosy 1997 to present

American Chemical Society 2003 to present

American Association for Cancer Research 2007 to present

Egyptian Syndicate of Pharmacists 1983 to present

Egyptian Pharmaceutical Association 1983 to present

Certified PADI Open Water Diver 1995 to present

National Pharmacy Honor Society, Rho Chi 1996 to present

ACCREDITATION COUNCIL FOR PHARMACY EDUCATION

FORM F: Faculty Information

A. Information

Name: Ronald A. Hill Date of Birth _____
 Department/Division Basic Pharmaceutical Sciences Licensed Pharmacist? No Yes State _____
 First Title at College Assistant Professor Date Appointed 3/30/1991
 Current Title Associate Professor Date Appointed 7/1/1998

B. Percentage activity (totals 100%):

Teaching 55 Scholarship 20 Service 25 Administrative (if applicable) 0

Estimated distribution of workload in the past year (%):

Activity	Per Cent (%)
Teaching:	
Didactic	<u>55</u>
Experiential	<u>0</u>
Practice	<u>0</u>
Scholarly Activity	<u>20</u>
Committee Assignments	<u>20</u>
Student Advising	<u>0</u>
Faculty Mentoring	<u>5</u>
Administration	<u>0</u>
Other:	
Total	100%

C. Teaching Responsibilities: List teaching responsibilities, during academic year of on-site evaluation; if different from previous years indicate (e.g. courses taught, include team teaching, practice experiences)

Pharmacy 409: Medicinal Chemistry II (3 semester hours, all)
 Pharmacy 410: Medicinal Chemistry III (3 semester hours, all)
 Pharmacy 569: Concepts in Drug Design (3 semester hours, all)
 Pharmacy 522: Advanced Pharmacology (one 2 hour class period)

D. Post-Secondary/Professional Education

University of Michigan	9/1978-5/1982	B.S. Chemistry
College	Dates Attended	Degree Earned
College	Dates Attended	Degree Earned

E. Graduate Education (Master of Science, Doctor of Philosophy)

Ohio State University	9/1986-8/1991	Ph.D.
College	Dates Attended	Degree Earned
College	Dates Attended	Degree Earned

F. Post-Graduate Training (Post-Doctoral training, Residency, Fellowship)

Institution	Dates Attended	Position
Institution	Dates Attended	Position

G. Previous Academic Positions

Institution	Dates of Employment	Position
Institution	Dates of Employment	Position

H: Publications during past 3 years

- Zharikova, O. L.; Ravindran, S.; Nanovskaya, T. N.; Hill, R. A.; Hankins, Gary D. V.; Ahmed, M. S.* Kinetics of glyburide metabolism by hepatic and placental microsomes of human and baboon. *Biochemical Pharmacology* 2007, 73, 2012–2019.
- Chilakapati, J., Korrapati, M. C., Hill, R. A., Warbritton, A., Latendresse, J. R., and Mehendale, H. M.* Role of thioacetamide sulfoxide in saturation of toxicokinetics of thioacetamide. *Toxicology* 2007, 230, 105–116.
- Devarakonda, B.; Otto, D. P.; Judefeind, A.; Hill, R. A.; de Villiers, M. M.* Effect of pH on the solubility and release of furosemide from polyamidoamine (PAMAM) dendrimer complexes. *International Journal of Pharmaceutics*, 2007, 345, 142–153.
- Chilakapati, J., Korrapati, M. C., Shankar, K., Hill, R. A., Warbritton, A., Latendresse, J. R. and Mehendale, H. M.* Role of CYP2E1 and saturation kinetics in the bioactivation of thioacetamide: effects of diet restriction and phenobarbital. *Toxicol. Appl. Pharmacol.* 2007, 219, 72–84.
- Schulte, Marvin K.;* Hill, Ronald A.;* Bikádi, Zsolt;* Maksay, Gábor; Parihar, Harish S.; Joshi, Prasad; Suryanarayanan, Asha. The structural basis of ligand interactions in the 5-HT₃ receptor binding site. In *Biological and Biophysical Aspects of Ligand-Gated Ion Channel Receptor Superfamilies*. Arias, Hugo R., editor. (Research Signpost Press, 2006, ISBN 81-7736-254-2), pp 127–154.
- Selvan, R.; Zharikova, O. L.; Hill, R. A.; Nanovskaya, T. N.; Hankins, G. D. V.; Ahmed, M. S.* Identification of Glyburide Metabolites formed by Hepatic and Placental Microsomes of Humans and Baboons. *Biochemical Pharmacology*, 2006, 72, 1730–1737.

H: Publications during past 3 years

Devarakonda, B.; Hill, R. A.; Liebenberg, W.; Brits, M.; De Villiers, M. M.* Comparison of the aqueous solubilization of practically insoluble niclosamide by polyamidoamine (PAMAM) dendrimers and cyclodextrins. *International Journal of Pharmaceutics*, 2005, 304, 193–209.

Chilikapati, J.; Shankar, K.; Korrapati, M. C.; Hill, R. A.; Mehendale, H. M.* Saturation Toxicokinetics of Thioacetamide: Role in Development of Liver Injury. *Drug Metab. Dispos.*, 2005, 33, 1877–1885.

I. Presentations during past 3 years

Ravindran, Selvan; Zharikova, O. L.; Hill, R. A.; Nanovskaya, T. N.; Hankins, G. D. V.; Ahmed, M. S. Department of Obstetrics and Gynecology, University of Texas Medical Branch, Galveston, TX, USA. Abstracts, 62nd Southwest Regional Meeting of the American Chemical Society, Houston, TX, United States, October 19-22 (2006), SRM-614.

Selvan, Ravindran, Zharikova, Olga L., Hill, Ronald A., Nanovskaya, Tatiana N., Hankins, Gary D. V., Ahmed, Mahmoud S.* Metabolism of Glyburide by Microsomes from Human Liver and Placenta: A Study by HPLC-MS. Abstract MEDI 56, poster presented at the 231st American Chemical Society National Meeting, March 26, 2006, Atlanta, GA.

J. Present Scholarly Interests and Activities

- Synthesis of selected drug metabolites so that their pharmacological activities, biodistribution, and biotransformation kinetics can be directly characterized;
- Design and synthesis of novel bioprecursors intended to enable tissue-selective targeting based on differential enzyme distributions;
- Receptor-level efficacy (intrinsic activity) as a drug design facet.

K. Present Professional Interests and Activities

- Pharm.D. curriculum design;
- Fostering critical thinking by students;
- Advancing medicinal chemistry as a distinct discipline;
- Contributing to efforts in the broader community to improve interdisciplinary interfaces between medicinal chemistry and other scientific and clinically oriented disciplines;
- Accrual, via ongoing exposure to drug design and clinically oriented presentations and literature, of examples of clinical situations requiring or benefiting from medicinal chemistry understanding; promulgation of such examples via publication, presentation, and education in order to spotlight and promote the significance of practitioners' drug design understanding towards the artful, rational, and optimal clinical exploitation of medicinal substances; continuing to improve and optimize integration of carefully selected application-oriented medicinal chemistry content into Pharm.D. curricula for concept illustration and reinforcement; enhancement of foundational education for prospective pharmacy practitioners in medicinal chemistry and associated content areas.

ACCREDITATION COUNCIL FOR PHARMACY EDUCATION

FORM F: Faculty Information

A. Information

Name: Victor Hsia Date of Birth _____
 Department/Division Basic Pharmaceutical Sciences Licensed Pharmacist? No Yes State _____
 First Title at College Assistant Professor Date Appointed 7/1/2004
 Current Title Assistant Professor Date Appointed 7/1/2004

B. Percentage activity (totals 100%):

Teaching 40 Scholarship 40 Service 20 Administrative (if applicable) 0

Estimated distribution of workload in the past year (%):

Activity	Per Cent (%)
Teaching:	
Didactic	30
Experiential	10
Practice	0
Scholarly Activity	40
Committee Assignments	10
Student Advising	10
Faculty Mentoring	0
Administration	0
Other:	
Total	100%

C. Teaching Responsibilities: List teaching responsibilities, during academic year of on-site evaluation; if different from previous years indicate (e.g. courses taught, include team teaching, practice experiences)

Dr. Hsia participates in the teaching of PHAR 411 Pharmacology 1 (3 credits) every fall semester. The Instructor of Record is Dr. Briski.

Dr. Hsia serves as Instructor of Record of PHAR 414 Pharmacology 4 (4 credits) every spring semester. This is a team-taught course with Dr. Blaylock and Dr. Girish Shah.

D. Post-Secondary/Professional Education

National Taiwan University	9/86- 6/90	B.S.
College	Dates Attended	Degree Earned
College	Dates Attended	Degree Earned

E. Graduate Education (Master of Science, Doctor of Philosophy)

Wayne State University	9/93-8/99	Ph.D.
College	Dates Attended	Degree Earned
College	Dates Attended	Degree Earned

F. Post-Graduate Training (Post-Doctoral training, Residency, Fellowship)

National Institutes of Health	12/99-10/04	Research Fellow
Institution	Dates Attended	Position
Institution	Dates Attended	Position

G. Previous Academic Positions

Institution	Dates of Employment	Position
Institution	Dates of Employment	Position

H: Publications during past 3 years

Pinnoji RC, Bedadala GR, George B, Holland TC, Hill JM, Hsia SC.

Repressor element-1 silencing transcription factor/neuronal restrictive silencer factor (REST/NRSF) can regulate HSV-1 immediate-early transcription via histone modification. *Virology*. 2007 Jun 7;4:56.

Bedadala GR, Pinnoji RC, Hsia SC.

Early growth response gene 1 (Egr-1) regulates HSV-1 ICP4 and ICP22 gene expression. *Cell Res*. 2007 Jun;17(6):546-55.

I. Presentations during past 3 years

Louisiana Biomedical Research Network (LBRN) seminar. Seminar Title: Gene Regulation of HSV-1 During Infections (December 12, 2007)

International Herpesvirus Workshop in Asheville, NC. Title: REST/NRSF regulates HSV-1 Immediate-early Gene expression (July 22, 2007)

Department of Microbiology and Immunology, LSU HSC in Shreveport. Seminar Title: Function of Thyroid Receptor in HSV-1 Latency and Reactivation (March 20, 2007)

LSU Children Hospital. Seminar Title: Gene Regulation of HSV-1 by Chromatin Modification (March 9, 2007)

LSU Eye Center. Seminar Title: Role of REST/NRSF in HSV-1 Gene Expression (March 8, 2007)

ULM Department of Biology and the Museum of Natural History. Seminar Title: Function of Thyroid Receptor in Vertebrate Development (March 14, 2005)

ULM Department of Toxicity. Seminar Title: Chromatin and Transcription Regulation (January 28, 2005)

J. Present Scholarly Interests and Activities

Dr. Hsia is interested in the interaction of thyroid hormone (TH), HSV-1 infection, and Alzheimer's disease (AD). It has been shown that apolipoprotein ApoE4 and HSV-1 latent infection are risk factors for AD. However, the mechanisms are unclear. Dr. Hsia's preliminary data indicated that TH may regulate HSV-1 gene expression and capsid assembly to control ApoE function and pathogenesis of AD.

K. Present Professional Interests and Activities

Dr. Hsia is interested in the new concept and progress of pharmacogenetics and stem cell research. He will give a new course "Pharmacogenetics" with Dr. Kaddoumi in the spring semester of 2008.

ACCREDITATION COUNCIL FOR PHARMACY EDUCATION

FORM F: Faculty Information

A. Information

Name: Alamdar Hussain Date of Birth _____
 Department/Division Basic Pharmaceutical Sciences Licensed Pharmacist? No Yes State _____
 First Title at College Assistant Professor Date Appointed 1/1/2006
 Current Title Assistant Professor Date Appointed 1/1/2006

B. Percentage activity (totals 100%):

Teaching 33.3 Scholarship 33.3 Service 33.3 Administrative (if applicable) 0

Estimated distribution of workload in the past year (%):

Activity	Per Cent (%)
Teaching:	
Didactic	<u>33.3</u>
Experiential	<u>0</u>
Practice	<u>0</u>
Scholarly Activity	<u>33.3</u>
Committee Assignments	<u>16.8</u>
Student Advising	<u>16.6</u>
Faculty Mentoring	<u>0</u>
Administration	<u>0</u>
Other:	
Total	100%

C. Teaching Responsibilities: List teaching responsibilities, during academic year of on-site evaluation; if different from previous years indicate (e.g. courses taught, include team teaching, practice experiences)

Phar 432, Course Instructor

D. Post-Secondary/Professional Education

Kakatiya University, India	1995-1999	B.S. Pharmacy
College	Dates Attended	Degree Earned
College	Dates Attended	Degree Earned

E. Graduate Education (Master of Science, Doctor of Philosophy)

Texas Tech University Health Science Center	2001-2005	Ph.D.
College	Dates Attended	Degree Earned
College	Dates Attended	Degree Earned

F. Post-Graduate Training (Post-Doctoral training, Residency, Fellowship)

Institution	Dates Attended	Position
Institution	Dates Attended	Position

G. Previous Academic Positions

Institution	Dates of Employment	Position
Institution	Dates of Employment	Position

H: Publications during past 3 years

1. Hussain A, Majumder QH, Ahsan F (2006). Inhaled insulin is better absorbed when administered as a dry powder compared to solution in the presence or absence of alkylglycosides. *Pharmaceutical Research*, 23(1):138-147.
2. Hussain A, Ahsan F (2006). Indication of transcytotic movement of insulin across human bronchial epithelial cells. *Journal of Drug Targeting*, 14(4):181-90.
3. Yang T, Hussain A, Bai S, Khalil IA, Harashima H, Ahsan F (2006). Positively charged polyethylenimines enhance nasal absorption of the negatively charged drug, low molecular weight heparin. *Journal of Controlled Release*, 115(3):289-297
4. Hussain A, Ahsan F (2005). The vagina as a route for systemic drug delivery. *Journal of Controlled Release*, 103(2):301-313.
5. Hussain A, Ahsan F (2005). State of insulin self association does not affect its absorption from the pulmonary route. *European Journal of Pharmaceutical Sciences*, 25(2-3):289-298.

I. Presentations during past 3 years

S. Balkundi, K. Amancha, Y. Lvov, A. Hussain.

Electrostatic layer-by-layer nanoassembly of polyions for sustained release of parathyroid hormone. AAPS Annual Meeting & Exposition. San Diego, CA. Nov 11-15, 2007.

K. Amancha, S. Balkundi, Y. Lvov, A. Hussain.

Release of insulin from halloysite nanotubes following their delivery via different routes of administration. AAPS Annual Meeting & Exposition. San Diego, CA. Nov 11-15, 2007.

S. Balkundi, Y. Lvov, A. Hussain.

Sustained release of insulin formulation using LbL electrostatic self assembly technique.

7th LA Materials and Emerging Technologies Conference, Baton Rouge, LA. Oct 23-24, 2006.

S. Balkundi, Y. Lvov, A. Hussain.

Encapsulation using layer by layer assembly of polyions for the sustained release of therapeutic proteins. 62nd Southwest Regional Meeting, Houston, TX. Oct 19-22, 2006.

J. Present Scholarly Interests and Activities

My research interest primarily focuses in the field of inhalation protein and peptide drug delivery. I am currently investigating ways to improve absorption of drugs by non-invasive routes in laboratory animals. I am also exploring and understanding the mechanisms of peptide and protein drug transport in vitro in cell culture models.

K. Present Professional Interests and Activities

ACCREDITATION COUNCIL FOR PHARMACY EDUCATION

FORM F: Faculty Information

A. Information

Name: Keith E. Jackson Date of Birth _____
 Department/Division Basic Pharmaceutical Sciences Licensed Pharmacist? No Yes State _____
 First Title at College Assistant Professor Date Appointed 1/2/2007
 Current Title Assistant Professor Date Appointed 1/2/2007

B. Percentage activity (totals 100%):

Teaching 50 Scholarship 40 Service 10 Administrative (if applicable) 0

Estimated distribution of workload in the past year (%):

Activity	Per Cent (%)
Teaching:	
Didactic	<u>45</u>
Experiential	<u>5</u>
Practice	<u>0</u>
Scholarly Activity	<u>30</u>
Committee Assignments	<u>10</u>
Student Advising	<u>10</u>
Faculty Mentoring	<u>0</u>
Administration	<u>0</u>
Other:	
Total	100%

C. Teaching Responsibilities: List teaching responsibilities, during academic year of on-site evaluation; if different from previous years indicate (e.g. courses taught, include team teaching, practice experiences)

Instructor of Record Pharm 412
 Teach Cardiac Respiratory and Renal Section of Pharm 412
 Teach Cardiac Pharmacology Section of Pharm 413

D. Post-Secondary/Professional Education

Southern University and A&M	6/1990-5/1994	B.S. Pre Med/Biology
College	Dates Attended	Degree Earned
College	Dates Attended	Degree Earned

E. Graduate Education (Master of Science, Doctor of Philosophy)

University of North Texas HSC	1/1996-5/2001	Ph.D. Biomedical Science
College	Dates Attended	Degree Earned
College	Dates Attended	Degree Earned

F. Post-Graduate Training (Post-Doctoral training, Residency, Fellowship)

University of North Texas HSC	5/2001-8/2002	Postdoctoral Fellow
Institution	Dates Attended	Position
Tulane University HSC	9/2002-5/2004	Postdoctoral Fellow
Institution	Dates Attended	Position

G. Previous Academic Positions

Tulane University HSC	6/2004-12/2006	Instructor
Institution	Dates of Employment	Position
Institution	Dates of Employment	Position

H: Publications during past 3 years

- Graciano ML, Nishiyama A, Jackson KE, Seth DM, Ortiz RM, Prieto-Carrasquero M, Kobori H, Navar LG. Purinergic Receptors Contribute to Early Mesangial Cell Transformation and Renal Vessel Hypertrophy during Angiotensin II-Induced Hypertension. *Am J Physiol Renal Physiol* 2008; 294 F161-F169.
- Johnson FK, Johnson RA, Durante W, Jackson KE, Stevenson BK, Peyton KJ. Metabolic syndrome increases endogenous carbon monoxide production to promote hypertension and endothelial dysfunction in obese Zucker rats. *Am J Physiol Regul Integr Comp Physiol* 2006 Mar;290(3):R601-8.
- Nishiyama A, Majid DS, Jackson KE, Rahman M, Navar LG. Renal interstitial fluid ATP responses to arterial pressure and tubuloglomerular feedback activation during calcium channel blockade. *Am J Physiol Heart Circ Physiol*. 2006 Feb;290(2):H772-7.
- Teran FJ, Johnson RA, Stevenson BK, Peyton KJ, Jackson KE, Appleton S., Durante W, Johnson FK. Heme oxygenase-derived carbon monoxide promotes arteriolar endothelial dysfunction and contributes to salt-induced hypertension in Dahl salt-sensitive rats. *Am J Physiol Regul Integr Comp Physiol* 2005 Mar;288(3):R615-22.
- Majid DS, Nishiyama A, Jackson KE, Castillo A. Superoxide scavenging attenuates renal responses to angiotensin ii during nitric oxide synthase inhibition in anesthetized dogs. *Am J Physiol Renal Physiol*. 2005 Feb;288(2):F412-9.

H: Publications during past 3 years

Majid DS, Nishiyama A, Jackson KE, Castillo A. Superoxide scavenging attenuates renal responses to angiotensin ii during nitric oxide synthase inhibition in anesthetized dogs. *Am J Physiol Renal Physiol*. 2005 Feb;288(2):F412-9.

- Majid DS, Nishiyama A, Jackson KE, Castillo A. Inhibition of nitric oxide synthase enhances superoxide activity in canine kidney. *Am J Physiol Regul Integr Comp Physiol*. 2004 Jul;287(1):R27-32.

I. Presentations during past 3 years

- Jackson KE, Johnson FK, Navar LG, Johnson RA. Restoration of endothelial function in obese Zucker rats. IDEA conference, June 10, 2006. Washington DC.
- Jackson KE, Johnson FK, Moehlen M, Navar LG, Johnson RA. Heme-derived carbon monoxide promotes endothelial dysfunction and hypertension in obese Zucker rats. *J Investig Med* 2005;53:S264. (Abstract 62)
- Jackson KE, Johnson FK, Navar LG, Johnson RA. L-arginine restores coronary endothelial function in obese Zucker rats. *J Investig Med* 2005;53:S265. (Abstract 65)
- Jackson KE, Johnson FK, Hale SS, Moehlen M, Navar LG, Johnson RA. Endogenous carbon monoxide promotes endothelial dysfunction in obese Zucker rats. *FASEB J* 19:A1237, 2005 (Abstract 687.16)
- Jackson KE, Johnson FK, Navar LG, Johnson RA. Coronary endothelial function in obese Zucker rats is restored by L-arginine. *FASEB J* 19:A634, 2005 (Abstract 364.17)
- Jackson KE, Johnson FK, Moehlen M, Navar LG, Johnson RA. Endogenous carbon monoxide alters water/sodium excretion independent of renal hemodynamics, *Experimental Biology* 2004, April 19, 2004, Washington DC.
- Majid DS, Jackson KE, Nishiyama A, Castillo A. Urinary 8-isoprostane excretion increases during nitric oxide inhibition in anesthetized beagles. *Experimental Biology* 2004, April 20, 2004, Washington DC.
- Jackson KE, Johnson FK, Moehlen M, Navar LG, Johnson RA. Endogenous carbon monoxide alters water/sodium excretion independent of renal hemodynamics, *Experimental Biology* 2004, April 20, 2004, Washington DC.

J. Present Scholarly Interests and Activities

Currently our laboratory is studying the role of carbon monoxide in angiotensin II dependent hypertension. Angiotensin II is a hormone produced in the body that promotes potent vascular vasoconstriction and salt and water retention. Angiotensin II levels have been reported to be abnormally elevated in several forms of hypertension. Current literature supports a role for angiotensin II leading to the deleterious end-organ damage and medical crisis seen in hypertensive patients.

In addition we are actively involved in reviewing and writing supplemental materials for the Pharm 412 and Pharm 413 courses, which will be assembled as a textbook in the near future.

K. Present Professional Interests and Activities

ACCREDITATION COUNCIL FOR PHARMACY EDUCATION

FORM F: Faculty Information

A. Information

Name: Seetharama D. Satyanarayanajois Date of Birth _____
 Department/Division Basic Pharmaceutical Sciences Licensed Pharmacist? No Yes State _____
 First Title at College Assistant Professor Date Appointed 1/1/2006
 Current Title Assistant Professor Date Appointed 1/1/2006

B. Percentage activity (totals 100%):

Teaching 45 Scholarship 45 Service 10 Administrative (if applicable) 0

Estimated distribution of workload in the past year (%):

Activity	Per Cent (%)
Teaching:	
Didactic	<u>45</u>
Experiential	<u>0</u>
Practice	<u>0</u>
Scholarly Activity	<u>45</u>
Committee Assignments	<u>3</u>
Student Advising	<u>5</u>
Faculty Mentoring	<u>0</u>
Administration	<u>0</u>
Other:	
	<u>2</u>
Total	100%

C. Teaching Responsibilities: List teaching responsibilities, during academic year of on-site evaluation; if different from previous years indicate (e.g. courses taught, include team teaching, practice experiences)

PHAR 418 Chemotherapeutic Agents, Co-teaching the course.
 PHAR 407 Medicinal Chemistry I, Coordinator

D. Post-Secondary/Professional Education

University of Mysore, India	1981-1984	B.Sc.
College	Dates Attended	Degree Earned
College	Dates Attended	Degree Earned

E. Graduate Education (Master of Science, Doctor of Philosophy)

University of Mysore, India	1984-1986	M.S.
College	Dates Attended	Degree Earned
Indian Institute of Science, Bangalore	1987-1994	Ph.D.
College	Dates Attended	Degree Earned

F. Post-Graduate Training (Post-Doctoral training, Residency, Fellowship)

University of Kansas at Lawrence	1994-1998	Research Associate
Institution	Dates Attended	Position
Institution	Dates Attended	Position

G. Previous Academic Positions

University of Kansas at Lawrence	1998-1999	Assistant Professor Research
Institution	Dates of Employment	Position
National University of Singapore, Singapore	1999-2005	Assistant Professor
Institution	Dates of Employment	Position

H: Publications during past 3 years

1. Ajikumar, P.K., Vivekanandan, S., Lakshminarayanan, R., Jois, S.D., Kini, R.M., Valiyaveetil, S. (2005). Mimicking the Function of Eggshell Matrix Proteins: Role of Multiplets of Charged Amino Acid Residues and Self-Assembly of Peptides in Biomineralization. *Angew. Chemie Intl.* 44: 5476-5479.
2. Sulochana, K.N., Fan, H., Jois, S.D, Subramanian, V., Sun, F., Kini, R.M., Ge, R. (2005). Peptides derived from human decorin leucine rich repeat 5 inhibit angiogenesis. *J. Biol. Chem.* 280: 27935-27948.
3. Kang, T.S., Vivekanandan, S., Jois, S.D., Kini, R.M. (2005). Effect of C-terminal amidation on folding and disulfide-pairing of alpha-conotoxin ImI. *Angew. Chemie Intl.* 44: 6333-6337.
4. Liu, J., Ying, J., Chow, V.T., Hrubby, V.J., Jois, S.D. (2005). Structure-activity studies of peptides from hot-spot region of human CD2 protein: Development of peptides for immunomodulation. *J. Med. Chem.* 48: 6236-49.
5. Chia, S.L., Tan, W.S., Shaari, K., Abdul Rahman, N., Yusoff, K., Jois, S.D. (2006). Structural analysis of peptides that interact with Newcastle disease virus. *Peptides* 27: 1217-1225.
6. Jois, S.D., Nagarajarao, L.M., Prabhakaran, M., Balasubramaniam, A. (2006). Modeling of neuropeptide receptors Y1, Y4, Y5 and docking studies with neuropeptide antagonist analogues: Implications for selectivity. *J. Biomol. Str. Dyn.* 23: 497-508.
7. Jois, S.D., Jining, L., Nagarajarao, L.M. (2006). Targeting T-cell adhesion molecules for drug –design. *Curr. Pharm. Des.* 12: 2797-812.
8. Kang, T.S., Jois, S.D., Kini, R.M. (2006). Solution structures of two structural isoforms of CMrVIA chi/lambda-conotoxin. *Biomacromolecules.* 7: 2337-46.
9. Cheng, W., Jois, S.D, Lim, L.Y. (2007). Aqueous-soluble, non-reversible lipid conjugate of salmon calcitonin: synthesis, characterization and in vivo activity. *Pharm. Res.* 24: 99-110.
10. Kang, T.S., Radic, Z., Talley, T.T., Jois, S.D., Taylor, P., Kini, R.M. (2007) Protein Folding Determinants: Structural Features Determining Alternative Disulfide Pairing in alpha- and chi/lambda-Conotoxins. *Biochemistry.* 46: 3338-3355.
11. Liu J, Li C, Ke S, Jois S.D. (2007). Structure-Based Rational Design of beta-Hairpin Peptides from Discontinuous Epitopes of Cluster of Differentiation 2 (CD2) Protein to Modulate Cell Adhesion Interaction. *J. Med Chem.* 50: 4038-4047.

H: Publications during past 3 years

12. Li, C., Jois S.D. (2007). Structure-function studies of peptides for cell adhesion inhibition: Identification of key residues by alanine mutation and peptide-truncation approach. *Peptides*. 28:1498-1508.
13. Thwin, M.M., Jois, S.D, Nagarajarao, L.M., Sato, K., Arjunan, P., Ramapatna, S.L., Kumar, P.V., Gopalakrishnakone, P. (2007). Novel Peptide Inhibitors of Human Secretory Phospholipase A2 with Anti-inflammatory Activity: Solution Structure and Molecular Modeling. *J Med Chem*. Nov 1; [Epub ahead of print].

I. Presentations during past 3 years

1. Liu, J., Li, C., Ke S, Jois S.D. "Structure-function studies of peptides for cell adhesion inhibition: Identification of key residues by alanine mutation and peptide-truncation approach." June 15-18, 2005, American Peptide Society symposium, San Diego, CA USA.
2. Li, C., Jois, S.D., "Structure-activity study of β -turn peptides designed as potential Immunomodulators." May 1st 2006, Bio-research Day, Shreveport, LA USA.
3. Xuming, Y., Jois, S.D. "Design of small molecular inhibitors targeted to HER-2 protein for breast cancer using docking method." April 2nd 2007, Graduate Symposium, University of Louisiana at Monroe, Monroe LA USA.
4. Giddu, S., Jois, S.D., Liu, J. "Design of β -hairpin peptides from CD2 protein to modulate T-cell adhesion interaction." May 20-22nd 2007, MALTO Annual meeting, Monroe LA USA.

J. Present Scholarly Interests and Activities

- 1) T-cell adhesion molecules for Immunomodulation: In this project we try to understand the molecular mechanism of autoimmune diseases. In particular, we are interested in understanding rheumatoid arthritis (RA) progress and suppression of RA using peptide based drugs.
- 2) Targeting HER-2 protein for breast cancer: In this project we are trying to design the molecules that block the interaction of HER-2 protein with other receptors which generates the signal for growth of cancer cells. Molecular modeling and cell culture techniques are used to evaluate several compounds for their anticancer activity. Funded by Louisiana Biomedical Research Network (LBRN).

K. Present Professional Interests and Activities

- 1) Executive Guest Editor, Current Pharmaceutical Design 2007-2008
- 2) Review research articles for Journals; Peptides, Biophysical Journal, Chemical Biology and drug-design, Current Pharmaceutical Design, European Journal of Medicinal Chemistry,
- 3) Thesis evaluation for overseas universities-Australia, India.
- 4) Graduate student thesis committee advisor for 2 students.

ACCREDITATION COUNCIL FOR PHARMACY EDUCATION

FORM F: Faculty Information

A. Information

Name: Amal Khalil Date of Birth _____
 Department/Division Basic Pharmaceutical Sciences Licensed Pharmacist? No Yes State _____
 First Title at College Assistant Professor Date Appointed 1/1/2007
 Current Title Assistant Professor Date Appointed 1/1/2007

B. Percentage activity (totals 100%):

Teaching 45 Scholarship 45 Service 10 Administrative (if applicable) 0

Estimated distribution of workload in the past year (%):

Activity	Per Cent (%)
Teaching:	
Didactic	<u>5</u>
Experiential	<u>0</u>
Practice	<u>0</u>
Scholarly Activity	<u>93</u>
Committee Assignments	<u>2</u>
Student Advising	<u>0</u>
Faculty Mentoring	<u>0</u>
Administration	<u>0</u>
Other:	
Total	100%

C. Teaching Responsibilities: List teaching responsibilities, during academic year of on-site evaluation; if different from previous years indicate (e.g. courses taught, include team teaching, practice experiences)

As part of my teaching training I helped Dr. Michael Degennaro in teaching a small part of his course Pharmaceutics I (402) in the fall semester of 2007.

D. Post-Secondary/Professional Education

Kuwait University	1985-1989	B. Sc. Biochemistry
College	Dates Attended	Degree Earned
College	Dates Attended	Degree Earned

E. Graduate Education (Master of Science, Doctor of Philosophy)

Nagasaki University	1998-2001	M.S. Pharmaceutical Sciences
College	Dates Attended	Degree Earned
Nagasaki University	2001-2004	Ph.D. Pharmaceutical Sciences
College	Dates Attended	Degree Earned

F. Post-Graduate Training (Post-Doctoral training, Residency, Fellowship)

University of Michigan	2004-2005	Postdoctoral Training
Institution	Dates Attended	Position
University of Washington, Seattle	2005-2006	Postdoctoral Training
Institution	Dates Attended	Position

G. Previous Academic Positions

Institution	Dates of Employment	Position
Institution	Dates of Employment	Position

H: Publications during past 3 years

1. Nakashima K., Kaddoumi A., Mori M., Nakashima M. N., Wada M., Aboul-Enein H., High Performance Liquid Chromatographic Method For The Disposition of Mazindol and its Metabolite 2-(2-aminoethyl)-3-(p-chlorophenyl)-3-hydroxyphthalimidine in Mouse Brain and Plasma. *Analytica Chimica Acta*. 2004; 502:39-47.
2. Kaddoumi A., Wada M., Nakashima M. N., Nakashima K., Hair Analysis for Fenfluramine and Norfenfluramine as Biomarkers for Nitrosfenfluramine Ingestion. *Forensic Science International*. 2004; 146: 39-46.
3. Kaddoumi A., Mori T., Nakashima M. N., Wada M., Nakashima K., High Performance Liquid Chromatography with Fluorescence Detection of Phenylpropanolamine in Human Plasma and Rats' Blood and Brain Microdialysates Using DIB-Cl as a Label, *Journal of Pharmaceutical and Biomedical Analysis*. 2004; 34:643-650.
4. Kaddoumi A., Nakashima M. N., Wada M., Nakashima K., Pharmacokinetic Interactions Between Phenylpropanolamine, Caffeine and Chlorpheniramine in Rats. *European Journal of Pharmaceutical Sciences*. 2004; 22: 209-216.
5. Kaddoumi A., Kikura-Hanajiri R., Nakashima K., High-Performance Liquid Chromatography with Fluorescence Detection for the Simultaneous Determination of 3,4-Methylenedioxyamphetamine, Methamphetamine and their Metabolites in Human Hair Using DIB-Cl as a Label. *Biomedical Chromatography*. 2004; 18: 202-204.
6. Kaddoumi A., Fleisher D., Heimbach T., Li L.Y., Cole S., P-glycoprotein Mediated Transport and CYP3A Metabolism of UK-343,664 in Rat Jejunum versus Ileum: Possible Role in Dose-Dependent Pharmacokinetics. *Journal of Pharmaceutical Sciences*. 2006; 95:435-445.
7. Wada M., Kurogi R., Kaddoumi A., Nakashima MN., Nakashima K., Pentazocine Monitoring in Rat Hair and Plasma by HPLC-Fluorescence Detection with DIB-Cl. *Luminescence*. 2006; 22:157-162.
8. Kaddoumi A., Kinman L., Choi S, Whittington D, Tsai C, Ho R.J., Anderson B.D., Unadkat J.D., Inhibition of P-glycoprotein Activity at the Primate Blood-Brain Barrier Increases the Distribution of Nelfinavir into the Brain but Not into the Cerebrospinal Fluid. *Drug Metabolism and Disposition*. 2007; 35:1459-1462.
9. Mikheev AM, Nabekura T., Kaddoumi A., Bammmler TK., Hebert MH, Unadkat JD. Profiling Gene Expression in Human Placentae of Different Gestational Ages: an OPRU Network and UW SCOR Study. *Reproductive Sciences*. 2008, in press.

H: Publications during past 3 years

Book Chapter:

Heimbach T., Fleisher D., Kaddoumi A., "Overcoming poor aqueous solubility of drugs for oral delivery" in Prodrugs: Challenges and rewards. Editors: Stella V., Borchardt R.T., Hageman M.J., Oliyai R., Tilley J.W., and Maag H. AAPS Press, Arlington, VA. Part 1, 2007; 157-216.

I. Presentations during past 3 years

1. Kaddoumi A., Kinman L., Choi S, Whittington D, Tsai C, Ho R.J., Anderson B.D., Unadkat J.D., Cerebrospinal fluid, Brain and Plasma Nelfinavir Levels Following Nelfinavir-Zosuquidar Administration in Nonhuman Primates. AAPS Annual Meeting, 11-15 November 2007. San Diego, CA.
2. Eyal S., Chung F., Muzi M., Hsiao P., Kaddoumi A., Link JM., Mankoff DA., Unadkat JD. In vitro to in vivo prediction of P-glycoprotein drug interactions at the Primate Blood-Brain (BBB) and the Blood-Placental Barrier (BPB): An OPRU and UW SCOR Study. AAPS Annual Meeting, 11-15 November 2007. San Diego, CA.
3. Hsiao P., Eyal S., Muzi M., Chung F., Kaddoumi A., Link JM, Mankoff DA., Bui T., Ho RJY., Unadkat JD. In vitro to in vivo prediction of P-gp based drug interactions at the human blood-brain barrier. 4th World Conference on Drug Absorption, Transport and Delivery, 20-22 June, 2007. Kanazawa, Japan.
4. Chung F, Link JM, Muzi M, Mankoff DA, Eyal S, Kaddoumi A, Shoner SC, Unadkat JD. PET Imaging of Inhibition of P-glycoprotein (P-gp) Activity at the Blood-Placental and Blood-Brain Barrier in the Pregnant Macaca Nemestrina: An OPRU* Study. AAPS Annual Meeting, 29 October-2 November, 2006. San Antonio, Texas, USA.
5. Mikheev AM, Nabekura T., Kaddoumi A. Chung F., Unadkat JD. Placental P-glycoprotein regulation by Wnt pathway: a UW SCOR Study. AAPS Annual Meeting, 29 October-2 November, 2006. San Antonio, Texas, USA.
6. Kaddoumi A., Heimbach T., Gupta M., Leppanen J, Fleisher D. Regional Permeability of Entacapone and its Phosphate prodrug Using The In Situ Rat Intestinal Perfusion Model. AAPS Annual Meeting and Exposition. 6-10 November, 2005. Nashville, Tennessee, USA.
7. Kaddoumi A., Fleisher D., Cole S., P-glycoprotein Mediated Transport and CYP3A Metabolism of UK-343,664 in Rat Jejunum versus Ileum: Possible Role in Dose-Dependent Pharmacokinetics. AAPS workshop on drug transporters in ADME: from the bench to the bedside. 7-9 March, 2005. Parsippany, New Jersey, USA.

J. Present Scholarly Interests and Activities

- Investigate roles and mechanisms of membrane-associated drug transporters in the distribution of drugs across the blood-brain and blood-cerebrospinal fluid barriers.
- Identify innovative ways to improve the delivery of drugs used for neurological diseases treatment into the CNS.
- Drug-drug interactions.

K. Present Professional Interests and Activities

Professional Memberships

2004-present American Association Of Pharmaceutical Scientists (AAPS)

2007-present American Association of Colleges of Pharmacy (AACCP)

Honors

- October 2007: AAPS/PPDM Education initiative award

- March 2005: Travel award from AAPS for “AAPS workshop on drug transporters in ADME: from the bench to the bedside”. Parsippany, New Jersey, USA.

- March 2004: Distinguished graduate student award of Nagasaki University, Japan.

- 1998-2004: The Ministry of Education, Culture, Sports, Science and Technology of Japanese Government Scholarship, Japan.

ACCREDITATION COUNCIL FOR PHARMACY EDUCATION

FORM F: Faculty Information

A. Information

Name: Yong-Yu Liu Date of Birth _____
 Department/Division Basic Pharmaceutical Sciences Licensed Pharmacist? No Yes State _____
 First Title at College Assistant Professor Date Appointed 1/2006
 Current Title Assistant Professor Date Appointed 1/2006

B. Percentage activity (totals 100%):

Teaching 50 Scholarship 45 Service 5 Administrative (if applicable) 0

Estimated distribution of workload in the past year (%):

Activity	Per Cent (%)
Teaching:	
Didactic	<u>25</u>
Experiential	<u>25</u>
Practice	<u>0</u>
Scholarly Activity	<u>30</u>
Committee Assignments	<u>5</u>
Student Advising	<u>15</u>
Faculty Mentoring	<u>0</u>
Administration	<u>0</u>
Other:	
Total	100%

C. Teaching Responsibilities: List teaching responsibilities, during academic year of on-site evaluation; if different from previous years indicate (e.g. courses taught, include team teaching, practice experiences)

Phar412 Co-Instructor,
 Phar522 Instructor
 Phar411_Co-Instructor, course taught

D. Post-Secondary/Professional Education

Soochow University School of Medicine	9/79-8/84	MD
College	Dates Attended	Degree Earned
College	Dates Attended	Degree Earned

E. Graduate Education (Master of Science, Doctor of Philosophy)

Shanghai University TCM	9/86-8/89	Ph.D.
College	Dates Attended	Degree Earned
College	Dates Attended	Degree Earned

F. Post-Graduate Training (Post-Doctoral training, Residency, Fellowship)

University of Manitoba, Canada	4/96-3/97	Postdoctoral Fellow
Institution	Dates Attended	Position
John Wayne Cancer Institute, CA	4/97-3/99	Postdoctoral Fellow
Institution	Dates Attended	Position

G. Previous Academic Positions

John Wayne Cancer Institute	1/02-5/05	Junior Member
Institution	Dates of Employment	Position
University of California at Los Angeles	6/05-12/05	Assistant Researcher
Institution	Dates of Employment	Position

H: Publications during past 3 years

1. Liu, Y.Y., Yu, J.Y., Yin, D., Patwardhan, G., Gupta, V., Hirabayashi, Y., Holleran, W. M., Jazwinski, S. M., Giuliano, A. E., Gouaze-Andersson, V., Consoli, D. P., Cabot, M. C. 2008. A role of ceramide in driving cancer cell resistance to doxorubicin. *FASEB J.* (in press)
2. Liu, Y.Y. 2008. The application of microarray in drug discovery. *Modern Pharmacological Methods* (book, in press)
3. Juan, W., Ping, X., Jiang L., Sun, S.R., Liu, Y.Y. 2006. Expression of glucosylceramide synthase in breast cancer. *J. Birth Health & Heredity* 14 (1):29-30.
4. Gouaze V, Liu, Y.Y., Prickett, C. S., Giuliano AE, Cabot MC. 2005. Glucosylceramide synthase blockade downregulates P-glycoprotein and resensitizes multidrug-resistant breast cancer cells to anticancer drugs. *Cancer Res.* 65:3861-3867
5. Gouaze V, Yu JY, Bleicher RJ, Han TY, Liu, Y.Y., Wang H, Gottesman MM, Bitterman A, Giuliano AE, Cabot MC. 2004. Overexpression of glucosylceramide synthase and P-glycoprotein in cancer cells selected for resistance to natural product chemotherapy. *Mol Cancer Ther.* 3(5):633-639.
6. Liu, Y. Y., Han, T. Y, Yu, J. Y., Bitterman, A., Le, A., Giuliano, A. E., and Cabot, M. C. 2004. Oligodeoxyribonucleotides blocking glucosylceramide synthase expression selectively reverse drug resistance in cancer cells. *J Lipid Res* 45:933-940
7. Liu, Y. Y., and Cabot, M. C. 2004. Development of a mammalian Tet-on expression cell line: glucosylceramide synthase regulates TNF- α -induced apoptosis. *Methods Mol. Biol.* 249:177-192

I. Presentations during past 3 years

1. Liu, Y.Y. Glucosylceramide synthase is a novel target for breast cancer treatment. January 26-28, 2007. Louisiana Biomedical Research Network Annual Meeting
2. Liu, Y.Y. Glucosylceramide synthase, a novel target for breast cancer treatment. August 25, 2006 LSU Staley S Scott Cancer Center (invited)
3. Liu, Y.Y, Taback, B., Yu, J.Y., Xie, P., Gouaze, V., Giuliano, A.E., Cabot, M.C. 2006. Glucosylceramide synthase, a modulator of drug resistance is overexpressed in metastatic breast cancer. Proceedings of the American Association for Cancer Research 46:1260
4. Liu, Y.Y, J.Y. Yu, A.E. Giuliano, M.C. Cabot. 2005. Glucosylceramide synthase is a new therapeutic target for breast cancer. Era of Hope-Department of Defense Breast Cancer Research Program Meeting P66-11
5. Gouaze, V., S. Young, J.Y. Yu, Y.Y. Liu, A.E. Giuliano, M.C. Cabot. 2005. Relationship between glucosylceramide synthase and P-glycoprotein in drug resistant human breast cancer cells. Era of Hope-Department of Defense Breast Cancer Research Program Meeting P66-8
6. Liu, Y.Y, J.Y. Yu, P. Xie, A.E. Giuliano, and M.C. Cabot. 2005. Glucosylceramide synthase (GCS) promoter-driven GCS gene suppression: a novel approach to target drug resistance. Proceedings of the American Association for Cancer Research 46:5087
7. Kang, J.C., J.Y Yu, V. Gouaze, Y.Y. Liu, and M.C. Cabot. 2004. The significance of ceramide metabolism in regulation of chemotherapy resistance in the treatment of pancreatic adenocarcinoma. Proceedings of the American Association for Cancer Research 46:5960
8. Liu, Y.Y, J.Y. Yu, V. Gouazé, N. Hansen, A.E. Giuliano, Y. Hirabayashi, and M.C. Cabot. 2004. The regulatory role of glucosylceramide synthase on gene expression contributes to drug resistance in breast cancer cells. Proceedings of the American Association for Cancer Research 45:615
9. Gouaze, V., Y. Y, Liu, A. E. Giuliano, M. C. Cabot. 2004. Diminished glycolipid synthesis conferred by glucosylceramide synthase antisense enhances cancer cell chemosensitivity through modifications in lipid composition and P-glycoprotein expression. Proceedings of the American Association for Cancer Research 45:5249
10. Gouaze, V., Y. Y, Liu, J. Y. Yu, C. S. Princkett, A. E. Giuliano, M. C. Cabot. 2004. Blockers of glycolipid metabolism diminish expression of the multidrug resistance gene (mdr1) and enhanced chemotherapy sensitivity. FASEB J 18(8):27.2

J. Present Scholarly Interests and Activities

Study the mechanisms of drug-resistance in cancers and develop gene-based therapeutic agents for cancer treatment. As principal investigator, establish a research program known in the nationwide

K. Present Professional Interests and Activities

Train Pharmacy students and PhD students of Pharmacology. Teach pharmacology and relevant courses to Pharmacy students and PhD students and advise them to complete research projects.

ACCREDITATION COUNCIL FOR PHARMACY EDUCATION

FORM F: Faculty Information

A. Information

Name: Sami Nazzal Date of Birth _____
 Department/Division Basic Pharmaceutical Sciences Licensed Pharmacist? No Yes State _____
 First Title at College Assistant Professor Date Appointed 7/20/2004
 Current Title Assistant Professor Date Appointed 7/20/2004

B. Percentage activity (totals 100%):

Teaching 45 Scholarship 45 Service 10 Administrative (if applicable) 0

Estimated distribution of workload in the past year (%):

Activity	Per Cent (%)
Teaching:	
Didactic	<u>25</u>
Experiential	<u>0</u>
Practice	<u>20</u>
Scholarly Activity	<u>45</u>
Committee Assignments	<u>5</u>
Student Advising	<u>1</u>
Faculty Mentoring	<u>0</u>
Administration	<u>1</u>
Other:	
	<u>3</u>
Total	100%

C. Teaching Responsibilities: List teaching responsibilities, during academic year of on-site evaluation; if different from previous years indicate (e.g. courses taught, include team teaching, practice experiences)

UNDERGRADUATE (Pharm. D.) COURSES

PHAR 402 Pharmaceutics I (4 credit hours; 3 theory and 1 laboratory hours)

PHAR 424 Pharmaceutics IV and

PHAR 424 Compounding (Pharmacy Practice) Lab

(4 credit hours; 3 theory and 1 laboratory hours)

GRADUATE COURSES

PHAR 502 Product Development (4 credit hours; 2 theory and 6 laboratory hours)

PHAR 579 Dosage Form Design (3 credit hours)

D. Post-Secondary/Professional Education

Jordan University of Science & Technology	8/92-2/97	B.S. Pharmacy
College	Dates Attended	Degree Earned
College	Dates Attended	Degree Earned

E. Graduate Education (Master of Science, Doctor of Philosophy)

Texas Tech University Health Sciences Center	8/98-5/02	Ph.D. Pharmaceutics
College	Dates Attended	Degree Earned
College	Dates Attended	Degree Earned

F. Post-Graduate Training (Post-Doctoral training, Residency, Fellowship)

Cardinal Health	1/02-7/04	Senior Scientist
Institution	Dates Attended	Position
Institution	Dates Attended	Position

G. Previous Academic Positions

Institution	Dates of Employment	Position
Institution	Dates of Employment	Position

H: Publications during past 3 years

1. Y. El-Malah and S. Nazzal*. Novel Use of Eudragit. NE 30D/Eudragit. L 30D-55 Blends as Functional Coating Materials in Time-Delayed Drug Release Applications. International Journal of Pharmaceutics (submitted)
2. V. Agarwal, S. Nazzal*, A. Siddiqui, and H. Ali. Dissolution and powder flow characterization of solid self-emulsified drug delivery system (SEDDS). Journal of Pharmaceutical Sciences (submitted)
3. H. Ali, M. Nazzal, A. A. Zaghloul, and S. Nazzal*. Comparison between lipolysis and compendial dissolution as alternative techniques for the in vitro characterization of α -Tocopherol Self Emulsified Drug Delivery Systems (SEDDS). International Journal of Pharmaceutics (in press)
4. Y. El-Malah and S. Nazzal*. Effect of Eudragit RS 30 D and Talc Powder on Verapamil Hydrochloride Release from Beads Coated with Drug Layered Matrices. AAPS PharmSci Tech (in press)
5. Y. El-Malah and S. Nazzal*. Fluid-Bed Coating: the Utility of Dual Programmable Pumps for Controlled Gradient Drug Deposition on Pellets. International Journal of Pharmaceutics, 337, 2007, 361-364
6. V. Agarwal*, M. A. Khan, and S. Nazzal. Polymethacrylate based microparticulates of insulin for oral delivery, Part II: Solid state characterization. Die Pharmazie (in press)
7. M. Meshali, H. Abdel-Aleem, F. Sakr, S. Nazzal*, and Y. El-Malah. In-Vitro Phonophoresis: Effect of Ultrasound Intensity and Mode at High Frequency on NSAIDs Transport across Cellulose and Rabbit Skin Membranes. Die Pharmazie (in press)

H: Publications during past 3 years

8. A.A. Zaghoul*, E. Taha, M. Afouna, I. Khattab, S. Nazzal. Ex-Vivo mucoadhesion and In-Vivo bioavailability assessment and correlation of ketoprofen tablet dosage form containing bioadhesives. *Die Pharmazie*, 65(5), 2007, 346-350
9. S. Nazzal*, M. Nazzal, and Y. El-Malah. A Novel Texture-Probe for the Simultaneous and Real-Time Measurement of Swelling and Erosion Rates of Matrix Tablets. *International Journal of Pharmaceutics*, 330 (1-2), 2007, 195–198
10. Y. El-Malah, C. B. Bottom, and S. Nazzal*. Hard Gelatin and Hypromellose (HPMC) Capsules: Estimation of Rupture Time by Real-Time Dissolution Spectroscopy. *Drug Development and Industrial Pharmacy*, 33(1), 2007, 27-34.
11. Y. El-Malah, S. Nazzal*, and N. M. Khanfar. D-Optimal Mixture Design: Optimization of Ternary Matrix Blends for Controlled Zero-Order Drug Release from Oral Dosage Forms. *Drug Development and Industrial Pharmacy*, 32(10), 2006, 1207-1218.
12. S. Nazzal*, M. A. Khan Controlled release of a self-emulsifying formulation from a tablet dosage form: Stability assessment and optimization of some processing parameters. *International Journal of Pharmaceutics*, 315, 2006, 110–121.
13. Y. El-Malah and S. Nazzal*. Hydrophilic Matrices: Application of Placket-Burman Screening Design to Model the Effect of POLYOX-Carbopol Blends on Drug Release. *International Journal of Pharmaceutics*, 309, 2006, 163–170.

I. Presentations during past 3 years

1. Y. El-Malah and S. Nazzal. Characterization of free films from Eudragit NE 30D/Eudragit L 30D-55 polymeric blends as novel materials for use in coating applications. AAPS Annual Meeting, San Diego, 2007
2. Y. El-Malah and S. Nazzal. Novel use of two programmable pumps in fluid bed coating for controlled gradient drug deposition on pellets. AAPS Annual Meeting, San Diego, 2007
3. Y. El-Malah and S. Nazzal. Pellet coating with drug-polymer blends: the effect of Eudragit RS 30D and talc on verapamil hydrochloride release from the layered matrices. AAPS Annual Meeting, San Diego, 2007
4. Y. El-Malah and S. Nazzal. Characterization of beads coated with monolithic films using contact surface profilometer, texture analyzer, and scanning electron microscopy. AAPS Annual Meeting, San Diego, 2007
5. Y. El-Malah and S. Nazzal. Novel use of Eudragit NE 30D/Eudragit L 30D-55 aqueous polymeric dispersion for delayed drug release from coated beads. AAPS Annual Meeting, San Diego, 2007
6. M. Meshali, H. Abdel-Aleem, F. Sakr, Y. El-Malah and S. Nazzal. Enhanced transdermal ibuprofen absorption from gels by phonophoresis. AAPS Annual Meeting, San Diego, 2007
7. Siddiqui, H. Ali, S. Nazzal, V. Agarwal. The use of powder rheometer to study flow behavior of self-emulsifying drug delivery systems (SEDDS) adsorbed on silica or silicates. AAPS Annual Meeting, San Diego, 2007
8. M. Meshali, H. Abdel-Aleem, F. Sakr, Y. El-Malah, and S. Nazzal. Effect of formulation composition of the coupling agent on the in-vitro transdermal transport of NSAIDs by phonophoresis. AAPS Annual Meeting, San Diego, 2007
9. H. Ali and S. Nazzal. A comparative study between lipolysis and physical characterization as alternative methods for the in vitro assessment of self-emulsifying drug delivery systems (SEDDS). AAPS Annual Meeting, San Diego, 2007
10. H. Ali and S. Nazzal. The effect of mono and divalent salts and their rate of addition on lipolysis rate of self emulsifying drug delivery systems (SEDDS). AAPS Annual Meeting, San Diego, 2007
11. V. Agarwal, S. Nazzal, A. Siddiqui, H. Ali, D. Moe. Solid self-emulsified drug delivery systems (S-SEDDS): the effect of silica adsorbent on drug release. AAPS Annual Meeting, San Diego, 2007
12. H. A. Ali and S. M. Nazzal. The use of statistical modeling to study the lipolysis and physical characterization of lipid-based formulations. ULM, 7th Annual Student Research Symposium, Monroe, LA, April 2007 and AAPS SRDG PHARM FORUM, Memphis, TN, May 2007.
13. Y. El-Malah, S. Nazzal. Statistical modeling of the effect of talc and polymer blend on verapamil HCL release from coated beads. ULM, 7th Annual Student Research Symposium, Monroe, LA, April 2007.
14. H. A. Ali, A. Siddiqui, Y. El-Malah, S. Nazzal. Application of D-optimal mixture design for the optimization of self-emulsifying drug delivery system of Vitamin E. AAPS Annual Meeting, San Antonio, November 2006 (The AAPS Journal Vol. 8, No. S2, Abstract M1273)
15. M. Meshali, F. Sakr, Y. El-Malah, S. Nazzal. In-Vitro phonophoresis: Effect of ultrasound parameters on NSAIDs delivery across cellulose and rabbit skin membranes. AAPS Annual Meeting, San Antonio, November 2006 (The AAPS Journal Vol. 8, No. S2, Abstract M1293)
16. Y. El-Malah, C. Bottom, S. Nazzal. Real-time dissolution spectroscopy: A novel method for the estimation of rupture time of hard shell capsules. AAPS Annual Meeting, San Antonio, November 2006 (The AAPS Journal Vol. 8, No. S2, Abstract W5256)
17. H. A. Ali, S. Nazzal. In-Vitro lipolysis and physical characterization of lipid based drug delivery systems of α tocopherol, 7th Louisiana Materials & Emerging Technologies Conference, Louisiana State University, Baton Rouge, October, 2006
18. Y. El-Malah, S. Nazzal. Pellet coating with a Eudragit NE 30D/L30 D55 polymer blends for time-delayed drug delivery, 7th Louisiana Materials & Emerging Technologies Conference, Louisiana State University, Baton Rouge, October, 2006
19. Yasser El-Malah and Sami Nazzal. Design and development of controlled release matrices: modeling release kinetics by texture analysis and response surface methodology (RSM). ULM, 6th Annual Student Research Symposium, Monroe, LA, April, 2006

I. Presentations during past 3 years

20. M. Meshali, H. Abdel-Aleem, F. Sakr, S. Nazzal and Y. El-Malah. In-Vitro Phonophoresis of Some NSAIDS: Effect of ultrasound intensity and mode on drug transport. LA Tech, Biomedical Research Foundation, and LSUHSC-S: BIO Research Day, Shreveport, LA, April 2006.
21. Y. El-Malah and S. Nazzal. Statistical Modeling and Spontaneous Measurement of Swelling Behavior of Hydrophilic Matrices Using a Novel Probe By Texture Analysis. LA Tech, Biomedical Research Foundation, and LSUHSC-S: BIO Research Day, Shreveport, LA, April 2006.
22. S. Bachawal, A. Shirode, V. B. Wali, G. V. Samant, S. M. Nazzal, and P. Sylvester. Comparative inhibitory effect of tamoxifen and vitamin E derivatives, when given alone or in combination, on neoplastic mammary epithelial cell growth and variability in culture. ULM, 6th Annual Student Research Symposium, Monroe, LA, April, 2006
23. B. Shirode, V. B. Wali, S. M. Nazzal, H. A. Ali, and P. Sylvester. Self-emulsifying drug delivery system for enhanced oral bioavailability of vitamin E compounds. ULM, 6th Annual Student Research Symposium, Monroe, LA, April, 2006
24. R. Hamed, Y. El-Malah and S. Nazzal. The Application of Experimental Screening Design in the Optimization of Vitamin E Lipid-Based Drug Delivery Systems. AAPS Annual Meeting, Nashville, 2005 (The AAPS Journal Vol. 7, No. S2, Abstract R6101).
25. R. Hamed and S. Nazzal. The Application of Real-Time Spectroscopy in Predicting In-Vitro Performance of Self-Emulsified Drug Delivery Systems (SEDDS). AAPS Annual Meeting, Nashville, 2005 (The AAPS Journal Vol. 7, No. S2, Abstract W4329).
26. Y. El-Malah and S. Nazzal. Design and Development of Controlled Release Matrices: Modeling Release Kinetics by Texture Analysis and Response Surface Methodology (RSM). AAPS Annual Meeting, Nashville, 2005 (The AAPS Journal Vol. 7, No. S2, Abstract M1224).
27. Y. El-Malah, R. Hamed, and S. Nazzal. Controlled Release Theophylline Matrices: Application of Plackett-Burman Screening Design to Model the Effect of Process and Formulation Variables on Tablet Dissolution. AAPS Annual Meeting, Nashville, 2005 (The AAPS Journal Vol. 7, No. S2, Abstract R6100).
28. R. Hamed and S. Nazzal. The Application of Real-Time Spectroscopy and Experimental Screening Design for the Optimization of Vitamin E Lipid-Based Drug Delivery Systems. ULM 2005 student research symposium, Monroe, LA, April, 2005 and AAPS SRDG PHARM FORUM, University, MS, May 2005.
29. Y. El-Malah and S. Nazzal. Polyox-Theophylline Matrices: Application of Plackett-Burman Screening Design to Model the Effect of Polymer Blends on Tablet Dissolution. ULM 2005 student research symposium, Monroe, LA, April, 2005 and AAPS SRDG PHARM FORUM, University, MS, May 2005.
30. S. Nazzal and M. A. Khan. Compaction of Solid-State Self-Emulsified Drug Delivery System of Ubiquinone: Characterization by Heckel Analysis and Surface Topography. LA Tech, Biomedical Research Foundation, and LSUHSC-S: BIO Research Day, Shreveport, LA. April 2005.
31. Y. El-Malah and S. Nazzal. Optimization of Theophylline Controlled Release Tablet Dosage Form: Effect of Polymer Blends. LA Tech, Biomedical Research Foundation, and LSUHSC-S: BIO Research Day, Shreveport, LA, April 2005.
32. R. Hamed and S. Nazzal. Optimization of Vitamin E Lipid-Based Drug Delivery System: Impact of Formulation Variables on Dispersion Process and Quality of the Emulsion. LA Tech, Biomedical Research Foundation, and LSUHSC-S: BIO Research Day, Shreveport, LA. April 2005.

J. Present Scholarly Interests and Activities

Interests: Formulation development and characterization of solid lipid nanoparticles.

Activities: Currently pursuing the following two collaborative research activities:

1. Modulation of oligonucleotides using nanoparticles against drug-resistance to improve cancer chemotherapy with Dr. Yong-Yu Liu
2. Cancer Research and Health Project with Dr. Paul Sylvester

K. Present Professional Interests and Activities

Member Curriculum Committee

Member International Education Council

ACCREDITATION COUNCIL FOR PHARMACY EDUCATION

FORM F: Faculty Information

A. Information

Name: Girish V. Shah Date of Birth _____
 Department/Division Basic Pharmaceutical Sciences Licensed Pharmacist? No Yes State _____
 First Title at College Professor Date Appointed 9/1/2003
 Current Title Professor Date Appointed 9/1/2003

B. Percentage activity (totals 100%):

Teaching 30 Scholarship 60 Service 10 Administrative (if applicable) 0

Estimated distribution of workload in the past year (%):

Activity	Per Cent (%)
Teaching:	
Didactic	<u>30</u>
Experiential	<u>0</u>
Practice	<u>0</u>
Scholarly Activity	<u>20</u>
Committee Assignments	<u>10</u>
Student Advising	<u>30</u>
Faculty Mentoring	<u>10</u>
Administration	<u>0</u>
Other:	
Total	100%

C. Teaching Responsibilities: List teaching responsibilities, during academic year of on-site evaluation; if different from previous years indicate (e.g. courses taught, include team teaching, practice experiences)

Phar 414 - Pharmacology IV
 Phar 558 - Advanced Cancer Pharmacology

D. Post-Secondary/Professional Education

University of Bombay	1964-1969	B.S.
College	Dates Attended	Degree Earned
College	Dates Attended	Degree Earned

E. Graduate Education (Master of Science, Doctor of Philosophy)

University of Bombay	1970-1972	M.S.
College	Dates Attended	Degree Earned
University of Bombay	1975-1979	Ph.D.
College	Dates Attended	Degree Earned

F. Post-Graduate Training (Post-Doctoral training, Residency, Fellowship)

Karolinska Institute, Stockholm	1980-1981	Postdoctoral Fellow
Institution	Dates Attended	Position
Max Planck Institute, Muenster	1983-1985	Humboldt Scholard
Institution	Dates Attended	Position

G. Previous Academic Positions

University of Kansas Medical Center	1990-1998	Research Associate Professor
Institution	Dates of Employment	Position
Texas Tech University HSC	1998-2003	Associate Professor/Professor
Institution	Dates of Employment	Position

H: Publications during past 3 years

Ren Y, Kulkarni, TR, Fu Wei and Shah GV (2005)
Targeted overexpression of pituitary calcitonin in gonadotrophs of transgenic mice leads to chronic hypoprolactinemia.
Mol. Cell. Endocrinology 229: 193-204.

Venkata S. Sabbiseti, Kedar S. Vaidya, Shibu Thomas, Maurizio Chiriva-Internati, Dean Reardon, Kenneth Iczkowsky and Girish V. Shah (2005)
Calcitonin Increases Invasiveness of Prostate Cancer Cells: role for cyclic AMP-dependent protein kinase A in calcitonin action.
Int. J. Cancer 117: 551-560.

Iczkowski, KA, A. Levi Omara-Opyene, Trupti Kulkarni and Girish V. Shah (2005)
Gsalph activity is linked to CD44 Variant and Matrix metalloprotease 9 expression and invasion in prostate cancer.
Anticancer Research 25 (3B); 2075-83.

Srinivasulu Chigurupati, Trupti Kulkarni, Shibu Thomas and Girish V. Shah. (2005)
Calcitonin stimulates multiple stages of angiogenesis by directly acting on endothelial cells
Cancer Research 65 (18): 8519-29

Shibu Thomas and Girish V. Shah (2005)
Calcitonin induces apoptosis resistance in prostate cancer cell lines against cytotoxic drugs via the Akt/survivin pathway
Cancer Biology and Therapy 4 (11): 226-33.

H: Publications during past 3 years

- Iczkowski, KA, Omara-Opyene AL, Pansara, M and Shah, GV (2005)
Paracrine calcitonin in prostate cancer is linked to CD44 variant expression and invasion.
Anticancer Research 25(3B):2075-83.
- Bharathi Devarakonda, Girish V. Shah, Srinivasul Chigurupati, Shibu Thomas and Melgardt M. de Villiers (2005)
The effect of polyamidoamine (PAMAM) dendrimers on the in vitro cytotoxicities of paclitaxel in cultured prostate cancer PC-3M cells. In Press.
- Sabbiseti Venkata, Srinivasulu, Shibu Thomas and Girish Shah (2006)
Calcitonin stimulates the secretion of urokinase-type plasminogen activator from prostate cancer cells: its implications on tumor cell invasion
Int. J. Cancer 118:2694-2702.
- Shibu Thomas, Srinivasulu Chigurupati, A. Muralidharan and Girish Shah. (2006)
Calcitonin increases tumorigenicity of prostate cancer cells: evidence for the role of protein kinase A and urokinase-type plasminogen receptor
Molecular Endocrinology 20(8): 1894-1911
- Kenneth A. Iczkowski, A. Levi Omara-Opyene, Ph.D, and Girish V. Shah (2006)
The predominant CD44 splice variant in prostate cancer binds fibronectin, and calcitonin stimulates its expression
Anticancer Research 26(4B): 2863-72
- Shibu Thomas, Maurizio Chiriva-Internati and Girish Shah (2007)
Calcitonin receptor-stimulated migration of prostate cancer cells is mediated by urokinase receptor-integrin signaling.
Clinical and Experimental Metastasis 24(5): 363-77.
- Shibu Thomas, A. Muralidharan and Girish V. Shah (2007).
RNA Interference-directed knock-down of Calcitonin Receptor expression induces apoptosis and growth arrest of human Prostate Cancer Cells in vivo
Int. J Oncology 31: 1425-1437, 2007
- Trupti Kulkarni-Paranjape and Girish V. Shah (2007)
Synthetic Peptide Derived from Mouse pit-CT cDNA Sequence Exhibits Potent Inhibition of Prolactin Secretion and PRL mRNA abundance in Primary Mouse Pituitary Cells
Endocrine 31(3):242-7.
- Khalid A. El Sayed, Surat Laphookhieo, Hany N. Baraka, Muhammad Yousaf, Anne Hebert, Danielle Bagaley, Frederick A. Rainey, A. Muralidharan, Shibu Thomas, and Girish Shah (2007)
Biocatalytic and Semisynthetic Optimization of the Anti-invasive Tobacco (1S,2E,4R,6R,7E,11E)-2,7,11-Cembratriene-4,6-diol.
Bioorganic and Medicinal Chemistry (In Press)
- Girish V. Shah (2007)
Calcitonin in Cancer In: *Encyclopedia of Cancer* 2nd Edition
Ed. M. Schwab, Springer Press, Heidelberg, Germany

I. Presentations during past 3 years

Shibu Thomas, Srinivasulu Chirugupati, Rajiv Nallu, and Girish V. Shah
Calcitonin is a potent inducer of prostate cancer cell proliferation and tumor progression
Annual Meeting of The American Association of Cancer Research, Anaheim, April 2005

Trupti Kulkarni and Girish V. Shah
Calcitonin Induces Apoptosis In Lactotrophs
Annual Meeting of The Endocrine Society, San Diego, CA June 2005

Bharathi Devarakonda, Srinivasulu Chigurupati, Shibu Thomas, Girish V. Shah and Melgardt M. de Villiers
Effect of Poly (amidoamine) (PAMAM) Dendrimers on Paclitaxel Solubility and In Vitro Cytotoxicity Against Prostate Cancer (PC-3M) Cells
The fourth International Dendrimer Symposium IDS-4, Mount Pleasant, Michigan, May 2004

Shibu Thomas and Girish Shah
Calcitonin stimulates the secretion of urokinase-type plasminogen activator from prostate cancer cells: its possible implications on tumor cell invasion
Annual Meeting of Society of Basic Urology Research, Miami, FL, December 2005.

Shibu Thomas and Girish Shah
Calcitonin stimulates migration of prostate cancer cells by up-regulating integrin $\alpha v \beta 3$ and integrin-mediated signaling
Annual Meeting of Society of Basic Urology Research, Miami, FL, December 2005.

Shibu Thomas, Srinivasulu Chigurupati and Girish Shah. (2005)
Calcitonin stimulates the secretion of urokinase-type plasminogen activator from prostate cancer cells: its possible implications on tumor cell invasion
Annual Meeting of The American Association of Cancer Research, Washington, DC, April 2006.

Kenneth Iczkowsky, Levi Omara and Girish Shah (2005)
CD44 variant promotes prostate cancer invasion by decreased adherence to hyaluronan, and CD44 standard re-expression abrogates its expression and growth promotion.
Annual Meeting of Society of Basic Urology Research, Miami, FL, December 2005.

Shibu Thomas, A. Muralidharan and Girish Shah (2006)
Role of PDZ domain as an integration site for Oncogenic Signaling in Prostate Cancer Cells by G protein-coupled Receptors
11th World Congress on Advances in Oncology and 9th International Symposium on Molecular Medicine, Creta Maris, Hersonissos, Crete, Greece, October 2006.

Invited presentation entitled "Membrane Proteins as Targets for Metastatic Prostate Cancer" at Third National Symposium on Prostate Cancer at Clark Atlanta University, Atlanta, GA, March 2007

Shibu Thomas, A. Muralidharan and Girish V. Shah. RNA Interference-directed silencing of Calcitonin Receptor expression induces apoptosis and growth arrest of human Prostate Cancer Cells in vivo. AACR Annual Meeting, Los Angeles, CA, 2007.

Khalid Elsayed, M. Mudit, J. Prestridge, A. Muralidharan, Thomas S, Shah GV. Marine Natural products are potential source for novel drugs for the treatment of metastatic prostate cancer. AACR Annual Meeting, Los Angeles, CA, 2007.

Girish V. Shah, Shibu Thomas, A. Muralidharan. Activation of calcitonin receptor in prostate cancer cells lead to the changes associated with epithelial-to-mesenchyme transition. AACR Annual Meeting, San Diego, CA, 2008.

Khalid Elsayed, Mohammed Khanfar, A. Muralidharan, Bhushan Awate, Daa TA, A. Youssef, Girish Shah. Targeting cytoskeleton signalng in cancer: Rational design of semisynthetic latrunculin analogs as inhibitors for metastatic postate cancer. AACR Annual Meeting, San Diego, CA, 2008.

J. Present Scholarly Interests and Activities

Basic and translational research in the area of prostate cancer

K. Present Professional Interests and Activities

Appointed to the reviewer panel for the research grant program of the US Department of Defence of Defence

Appointed to the reviewer panel for the research grant program of the Ontario Cancer Institute

Editorial Board of the Journal "Frontiers in Biosciences"

Ad-Hoc Reviewer for Merit Review Research Grant Applications in Endocrinology and Cancer Biology for the Department of Veterans Affairs

Ad-Hoc Reviewer- American Journal of Physiology, Endocrinology, Life Sciences, J of Leukocyte Biology, Endocrine, Molecular and Cellular Endocrinology, J Endocrinology, Biochemical Pharmacology, Biology of Reproduction, BMC-theoretical biology

ACCREDITATION COUNCIL FOR PHARMACY EDUCATION

FORM F: Faculty Information

A. Information

Name: Paul W. Sylvester Date of Birth _____
 Department/Division Basic Pharmaceutical Sciences Licensed Pharmacist? No Yes State _____
 First Title at College Associate Professor Date Appointed 9/1998
 Current Title Pfizer Endowed Prof. Pharmacology; Dir. Graduate Studies Date Appointed 2001,2005 respectively

B. Percentage activity (totals 100%):

Teaching 40 Scholarship 40 Service 10 Administrative (if applicable) 10

Estimated distribution of workload in the past year (%):

Activity	Per Cent (%)
Teaching:	
Didactic	<u>35</u>
Experiential	<u>0</u>
Practice	<u>0</u>
Scholarly Activity	<u>40</u>
Committee Assignments	<u>5</u>
Student Advising	<u>5</u>
Faculty Mentoring	<u>5</u>
Administration	<u>10</u>
Other:	
	<u>0</u>
Total	100%

C. Teaching Responsibilities: List teaching responsibilities, during academic year of on-site evaluation; if different from previous years indicate (e.g. courses taught, include team teaching, practice experiences)

Phar 413, Pharmacology III, Course Director
 Phar 552, Graduate Student Seminar, Fall and Spring Semester, Course Director
 Phar 521, Advanced Pharmacology, Course Director

D. Post-Secondary/Professional Education

Western Michigan University	1972-1976	P.S. Biology
College	Dates Attended	Degree Earned
College	Dates Attended	Degree Earned

E. Graduate Education (Master of Science, Doctor of Philosophy)

Michigan State University	1977-1982	Ph.D. Physiology
College	Dates Attended	Degree Earned
College	Dates Attended	Degree Earned

F. Post-Graduate Training (Post-Doctoral training, Residency, Fellowship)

Roswell Park Cancer Institute	1982-1985	Postdoctoral Fellow
Institution	Dates Attended	Position
Institution	Dates Attended	Position

G. Previous Academic Positions

Washington State University	1988-1998	Assistant Professor
Institution	Dates of Employment	Position
Institution	Dates of Employment	Position

H: Publications during past 3 years

Sylvester, P.W. and S. Shah. 2005 Mechanisms mediating the antiproliferative and apoptotic effects of vitamin E in mammary cancer cells. *Frontiers In Bioscience* 10:699-609.

Shah, S. and P.W. Sylvester. 2005 Tocotrienol-induced cytotoxicity is unrelated to mitochondrial stress apoptotic signaling in neoplastic mammary epithelial cells. *Biochemistry and Cell Biology*. 83:86-95.

Shah, S. and P.W. Sylvester. 2005 Antiproliferative effects of α -tocotrienol are associated with a reduction in Akt and NFkB activity. *Experimental Biology and Medicine*. 230: 235-241.

Sylvester, P.W., S.J. Shah, and G.V. Samant. 2005 Intracellular signaling mechanisms mediating the antiproliferative and apoptotic effects of α -tocotrienol in neoplastic mammary epithelial cells. *Journal of Plant Physiology* 162:803-810.

Sylvester, P.W., S.J. Shah, D.T. Haynie, and K.P. Briski. 2005 Effects of ultra-wideband electromagnetic pulses on preneoplastic mammary epithelial cell proliferation. *Cell Proliferation*. 38:153-163.

Sylvester, P.W. and S. Shah. 2005 Intracellular mechanisms mediating tocotrienol-induced apoptosis in neoplastic mammary epithelial cells. *Asian Pacific Journal of Clinical Nutrition* 14:366-373.

Sawant, S., D. Youssef, A. Mayer, P. Sylvester, V. Wali, M. Arant, and K. El Sayed. 2006 Anticancer and anti-inflammatory sulfur-containing semisynthetic derivatives of sarcophine. *Chemical and Pharmaceutical Bulletin* 54:1119-1123.

H: Publications during past 3 years

Samant, G.V., and P. W. Sylvester. 2006 α -Tocotrienol inhibits ErbB3-dependent PI3K/Akt mitogenic signaling in of neoplastic mammary epithelial cells. *Cell Proliferation* 39:563-574.

Sylvester, P.W. 2006. Targeting the PI3K/PDK/Akt Signaling Pathway in Anticancer Therapy. In: *Trends in Signal Transduction Research*, eds. Jennifer N. Meyer, 173-190. Nova Science Publishers, Inc., Hauppauge, NY.

Sawant, S.S., D. T.A. Youssid, P. W. Sylvester, V. Wali, and K. A. El Sayed 2007 Antiproliferative sesquiterpenes from the Red Sea soft coral *Sarcophyton glaucum*. *Natural Product Communications* 2:117-119.

Sandeep, J., Shirole, A., Yacoub, S., Barbo, A., Sylvester, P.W., Huntimer, E., Halaweish, F., and El Sayed, K.A. 2007 Biocatalysis of the anticancer sipholane triterpenoids. *Planta Medica* 73: 1-6.

El Sayed, K.A. and Sylvester P.W. (2007) Biocatalytic and semisynthetic studies of the anticancer tobacco cembranoids. *Expert Opinions on Investigational Drugs* 16: 877-887.

Sylvester, P.W., Wali, V.B., Shirole, A.B., Bachawal, S.V., and El Sayed, K.A. (2007) Tocotrienols Are the Most Potent Anticancer Agents in the Vitamin E Family of Compounds. *Current Research in Cancer* 1: 55-75.

Wali, V.B. and Sylvester, P.W. (2007) Synergistic antiproliferative effects of α -tocotrienol and statin treatment on mammary tumor cells. *Lipids* 42:1113-1123.

El Sayed K., Laphookhieo, S., Yousaf, M., Prestridge, J., Shirole, A.B., Wali, V.B., and Sylvester, P.W. (2007) Semisynthetic and biocatalytic anticancer optimization of tobacco (1S, 2E, 4S, 6R, 7E, 11E) – 2,7,11-cembratriene-4,6-diol. *Journal of Natural Products* (in press).

Sylvester, P.W. 2007. Mechanisms Mediating Vitamin E-Induced Apoptosis in Mouse Mammary Tumors. In: *New Cell Apoptosis Research*, eds. Lindsey C. Vinter, 53-66. Nova Science Publishers, Inc., Hauppauge, NY.

Sylvester, P.W. 2007. Vitamin E and Apoptosis. In: *Vitamins and Hormones*, Volume 76, ed. G. Litwack, 329-356. Elsevier Inc, San Diego, CA.

Sylvester, P.W. 2008. Antiproliferative and Apoptotic Effects of Tocotrienols on Normal and Neoplastic Mammary Epithelial Cells. In: *Tocotrienols: Vitamin E Beyond Tocopherols*, eds. Ronald R. Watson, (in press) AOCS Press, Champaign, IL.

Sylvester, P.W., Bachawal, S.V., Wali, V.B. and Shirole, A.B. (2008) Epidermal Growth Factor Receptor Dependent Mitogenic Signaling in Normal and Malignant Mammary Epithelial Cells. In: *Cellular Growth Processes*, ed. Daiki Kimura, Nova Science Publishers, Inc., Hauppauge, NY. (in Press)

I. Presentations during past 3 years

Sawant S., Sylvester, P.W., Avery, M., Desai, P., Youssef, D., El Sayed, K. (2005) Optimization of bioactive cembranoid leads from the Red Sea soft coral sarcophyton glaucum. 46th Annual Meeting of the American Society of Pharmacognosy, Corvallis, OR.

Sylvester, P.W., Shah, S.J., and Samant, G.V. (2005) Intracellular signaling mechanisms mediating the antiproliferative and apoptotic effects of α -tocotrienol in neoplastic mammary epithelial cells. Conference on Occurrence, Metabolism, and Function of Vitamin E in Plants, Man and Animals, Salzau, Germany.

Samant, G.V., Shah, S.J., and Sylvester, P.W. (2005) Vitamin E inhibition of malignant mammary epithelial cell growth is mediated through the suppression of PI3K activity and mitogenic signaling. Proceeding of the American Association of Cancer Researchers. Abstract #2314.

Sawant, S., Barbo, A., Bhandare, R., Sylvester, P.W., and El Sayed, K.A. (2005) BioResearch Day, Pharmaceutical/Drug Discovery Section, LSU Technology Transfer Center, Shreveport, LA.

Sawant, S., Sylvester, P.W., Avery, M., Desai, P., Youssef, D.T.A., El Sayed, K.A. (2005) Semisynthetic and biocatalytic studies of cembranoids from the Red Sea soft coral Sarcophyton glaucum. 32nd Annual MALTO Medicinal Chemistry-Pharmacognosy Meeting, Oxford, MS.

Sylvester, P.W., Shah, S.J., and Samant, G.V. (2005) Role of Akt in Mediating the Antiproliferative and Apoptotic Effects of Vitamin E in Neoplastic Mammary Epithelial Cells. BioResearch Day, Pharmaceutical/Drug Discovery Section, LSU Technology Transfer Center, Shreveport, LA.

Sylvester, P.W. (2005) Palm minor components and health with special emphasis on palm vitamin E and carotenoids. Plenary lecture, The 4th Global Oils and Fats Business Forum USA, September 8-9, 2005, San Diego, CA.

Sylvester, P.W. (2005) Antiproliferative and apoptotic effects of α -tocotrienol are mediated through the suppression of Akt signaling in neoplastic mammary epithelial cells. Proceedings of the MPOB International Palm Oil Congress (PIPOC), September 25-29, 2005, Kuala Lumpur, Malaysia.

Samant, G.V. and Sylvester, P.W. (2006) Antiproliferative effects of γ -tocotrienol is mediated through a reduction in ErbB3 tyrosine phosphorylation and mitogenic signaling in neoplastic mouse mammary epithelial cells Proceeding of the American Association of Cancer Researchers. Abstract # 2654.

Wali, V.B. and Sylvester, P.W. (2006) Antiproliferative effects of HMG-CoA reductase inhibitors (statins) are significantly enhanced when used in combination with α -tocotrienol in neoplastic mammary epithelial cells in culture. Proceeding of the American Association of Cancer Researchers. Abstract # 1347.

El Sayed, K., Phadnis, A., Yousaf, M., Prestridge, J., Sawant, S., Wali, V., Sylvester, P. W., Steffen, R., and Mueller, W. (2006) Biocatalytic and semisynthetic studies of anticancer tobacco cembranoids. The 47th Annual Meeting of the American Society of Pharmacognosy.

SSawant, S., Youssef, D.T.A., Sylvester, P.W., Marchetti, D., and El Sayed, K.A. (2006) Towards optimizing anticancer terpenes from the Red Sea soft coral Sarcophyton glaucum. BioResearch Day, Pharmaceutical/Drug Discovery Section, LSU Technology Transfer Center, Shreveport, LA.

Phadnis, A., Yousaf, M., Wali, V., Sylvester, P.W., and El Sayed, K. (2006) Biocatalysis and Anticancer Activity of Tobacco Cembranoids. BioResearch Day, Pharmaceutical/Drug Discovery Section, LSU Technology Transfer Center, Shreveport, LA.

El Sayed, K., Phadnis, A., Yousaf, M., Prestridge, J., Sawant, S., Wali, V., and Sylvester, P.W. (2006) Biocatalytic and Semisynthetic Studies of Anticancer Tobacco Cembranoids. BioResearch Day, Pharmaceutical/Drug Discovery Section, LSU Technology Transfer Center, Shreveport, LA.

Sylvester, P.W. (2006) Antiproliferative effects of γ -tocotrienol in mouse mammary tumor cells. BioResearch Day, Pharmaceutical/Drug Discovery Section, LSU Technology Transfer Center, Shreveport, LA.

I. Presentations during past 3 years

- Jain, S., Barbo, A., Youssef, D., El Sayed, K., Wali, V., Sylvester, P.W. (2006) Biocatalytic study of bioactive marine natural products triterpenoid siphonanes. 47Th Annual Meeting of the American Society of Pharmacognosy. Abstract #P-091.
- Sawant, S., Youssef, D., Sylvester, P.W., Marchetti, D., El Sayed, K. (2006) Towards investigating and optimizing the anticancer properties of marine cembranoids. 47Th Annual Meeting of the American Society of Pharmacognosy. Abstract #P-236.
- El Sayed, K., Boakye, E., Bagaley, E., Rainey, F., Wali, V., Sylvester, P.W. (2006) Anticancer phenazines and diketopiperazines from the symbiotic marine actinobacteria pelagiobacter and kocuria species. 47Th Annual Meeting of the American Society of Pharmacognosy. Abstract #P-276.
- El Sayed., Phadnis, A., Yousaf, M., Prestridge, J., Sawant, S., Wali, V., Sylvester, P.W., Steffen, R., and Mueller, W. (2006) Biocatalytic and semisynthetic studies of anticancer tobacco cembranoids. 47Th Annual Meeting of the American Society of Pharmacognosy. Abstract #O-15.
- Wali, V.B., and Sylvester, P.W.. (2007) The synergistic inhibitory effect of combined statin and α -tocotrienol treatment on the growth of the highly malignant +SA mammary epithelial cells in culture is mediated through the inhibition of MAPK and Akt mitogenic signaling. Proceeding of the American Association of Cancer Researchers. Abstract # 4784.
- Prestridge, J., Muralidharan, A., Shirode, A., Thomas, S., Wali, V., Shah, G., Sylvester, P.W. and El Sayed. (2007) Semisynthetic studies of the anticancer tobacco cembranoids. 34th Annual MALTO Medicinal Chemistry-Pharmacognosy Meeting-in-Miniature. Abstract #O11.
- Ramezani, S., Shirode, A., Wali, V., Shah, G., Sylvester, P.W., El Sayed, K. (2007) Biocatalytic study of tobacco cembranoid (1S,2E,4S,6R,7E,11E)-2,7,11-cembratriene-4,6-diol-6-O-acetate. 34th Annual MALTO Medicinal Chemistry-Pharmacognosy Meeting-in-Miniature. Abstract #P4.
- Orabi, A., Sylvester, P.W., Wali, V., and El Sayed, K. (2007) Chemistry and pharmacology of palm oil tocotrienol-rich fraction. 34th Annual MALTO Medicinal Chemistry-Pharmacognosy Meeting-in-Miniature. Abstract #P15.
- Shirode, A.B., and Sylvester, P.W. (2008) Enhanced growth inhibitory effects of combined celecoxib and α -tocotrienol treatment on neoplastic mouse mammary epithelial cells in vitro. Proceeding of the American Association of Cancer Researchers. Abstract # (in press).
- Bachawal, S.V., Wali, V.B., and Sylvester, P.W. (2008) Antiproliferative effects of combined EGFR inhibitor and α -tocotrienol treatment is associated with the suppression of ErbB3 and ErbB4 receptor activity in neoplastic mammary epithelial cells. Proceeding of the American Association of Cancer Researchers. Abstract # (in press).
- Wali, V.B., Bachawal, S.V., and Sylvester, P.W. (2008) Synergistic inhibition of +SA mammary tumor cell growth by combined statin and α -tocotrienol treatment in culture is mediated through induction of G1 cell cycle arrest. Proceeding of the American Association of Cancer Researchers. Abstract # (in press).

J. Present Scholarly Interests and Activities

Our current research interests are reflective of our continued interest in the area of breast cancer prevention. Breast cancer is the most prevalent malignancy in women and the incidence has steadily increased over the past 50 years. While specific genes have been identified which predisposes women to breast cancer, this familial form of the disease is rare and accounts for no more than 5-10% of all breast cancers. The vast majority of breast cancers result from yet to be identified factors. Although there have been significant advances in early diagnosis and treatment, the overall risk of breast cancer remains high. Therefore, therapeutic strategies designed to prevent breast cancer would greatly reduce breast cancer mortality. Our laboratory has been investigating the anticancer effects of various forms of vitamin E. Vitamin E is a generic name that represents a family of compounds. The vitamin E family of compounds is further divided into two subgroups called tocopherols and tocotrienols. Although tocopherols and tocotrienols are both potent antioxidants, tocotrienols display significantly greater anticancer activity than tocopherols. Our laboratory is conducting experiments to determine the exact intracellular mechanism(s) mediating the anticancer effects of tocotrienols, with the ultimate goal of providing useful insights for basing effective strategies for use of tocotrienols in the prevention and treatment of breast cancer in women.

K. Present Professional Interests and Activities